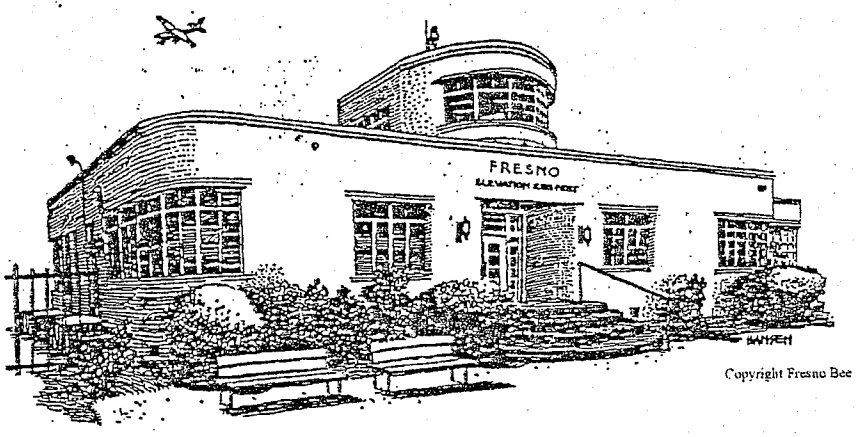

FRESNO-CHANDLER DOWNTOWN AIRPORT MASTER AND ENVIRONS SPECIFIC PLAN

Adopted April 13, 1999

Prepared By:

City of Fresno
Department of Airports

City of FRESNO REPORT TO THE CITY COUNCIL

AGENDA ITEM NO. 5:30pm
COUNCIL MEETING 4/13/99
APPROVED BY
DEPARTMENT DIRECTOR
CITY MANAGER

April 13, 1999

FROM: ALVIN P. SOLIS, Director
Development Department

BY: NICK P. YOVINO, Deputy Development Director
Planning Division

SUBJECT: PUBLIC HEARING TO CONSIDER THE DRAFT FRESNO-CHANDLER DOWNTOWN AIRPORT MASTER AND ENVIRONS SPECIFIC PLAN, RELATED AMENDMENTS TO THE EDISON COMMUNITY PLAN AND FRESNO GENERAL PLAN, AND MITIGATED NEGATIVE DECLARATION AND ENVIRONMENTAL ASSESSMENT

BACKGROUND

With its initial development dating to the 1920's, Fresno-Chandler Downtown Airport is one of the oldest operational airports in California. It began with a single landing strip on land which the W. F. Chandler family deeded to the City of Fresno in 1928 for use as a municipal airport. Commercial airline service began there in 1930. In 1947, that service was transferred over to the larger airport which the City of Fresno acquired from the federal government after World War II. Fresno- Chandler Airport is still owned and operated by the City of Fresno and occupies approximately 200 acres of land located just one and one-half miles west of downtown Fresno.

In 1976, the City adopted the Fresno-Chandler Downtown Airport Master Plan Report, related to use of the Airport property. On June 25, 1982, the City Council adopted Ordinance No. 82-54 establishing the Fresno-Downtown Airport Environs Specific Plan related to land use, circulation and open space for the area surrounding the Airport.

A City-hired consultant, Shutt Moen Associates of Santa Rosa, California, has recently prepared an update of the Fresno-Chandler Downtown Airport Master Plan Report. The Department of Airports has prepared a companion document, the draft Fresno-Chandler Downtown Airport Master and Environs Specific Plan which updates the 1982 Environs Plan and incorporates the new Master Plan. On December 8, 1998, the City Council initiated the public review process of this new draft document.

The purpose of the Fresno-Chandler Master and Environs Specific Plan is to (1) minimize the exposure of the public to high noise levels and safety hazards through land use and population density controls for property in the vicinity of Fresno-Chandler Airport, and (2) to limit urban encroachment around the Airport in order to allow for its continued viability. This Plan incorporates the recommendations set forth in the current Caltrans Airport Land Use Planning

Presented to City Council
Date 4/13/99
Disposition B-25 ord. 99-22 & Res. 99-99 adopted

Handbook pertaining to land use, noise and safety issues. Threats to the continuation of flight operations, or to the lives, property, health, and welfare of persons on the ground are considered legitimate interests of the Environs Plan.

The Environs Plan is a refinement of the City of Fresno General Plan (1984), the Edison Community Plan (1977), the Southwest Fresno GNRA Project Renewal Plan (1969), the Roeding Business Park Redevelopment Plan, and supercedes, updates, and consolidates the Fresno-Chandler Downtown Airport Environs Specific Plan (1982) and the Master Plan (1976). The Edison Community Plan, Roeding Business Park Redevelopment Plan, and the Southwest GNRA Project Renewal Plan govern land uses in the Airport review area, and the new Environs Plan will not amend any of their land uses, but will modify any airport related property development standards.

The Fresno-Chandler Downtown Airport Master Plan Report (1998), with its accompanying Airport Layout Plan, Building Plan and Airspace Plan, is incorporated into the Environs Plan by reference and made a part thereof.

Although the overall approach to the Master Plan study has been comprehensive in scope, the study has nevertheless focused on several major issues:

(1) Identification of the current and long term roles of Fresno-Chandler Airport within the two-airport system operated by the City of Fresno.

(2) Projection of potential aircraft activity levels, taking into account the effects of the planned Roeding Business Park and the overall population and economic growth of the Fresno region.

(3) Assessment of the appropriate future configuration of the runway system, including examination of possible modifications to Runway 12R-30L and closure of Runway 12L-30R. This would establish a runway length within the currently owned airport property that would accommodate the Beechcraft Super King Air 200 airplane. The effect of the current shorter runway length is that some aircraft are weight restricted on hot days.

(4) Determination of the building area facilities-fixed base operations facilities, hangar space, etc., and land areas needed to accommodate long-term general aviation requirements.

(5) Assessment of the development potential, both aviation related or non-aviation

related, of the currently vacant land on the Airport's north side.

(6) Identification of reasonable measures which should be taken to protect the Airport from future incompatible development, especially to the northwest.

(7) Outline of a plan for promoting and marketing the Airport to the principal user groups.

All zoning applications, conditional use permits, site plan reviews, variances, subdivision maps and parcel maps for property within the Airport Review Area Boundary must be consistent with the policies of the new Plan, with land use designations of the underlying adopted City plans and with the procedures specified in the City of Fresno Municipal Code.

THE PUBLIC REVIEW PROCESS

The Development Department has twice mailed approximately 3000 public notices to property owners whose property is located in or near the Airport Review Area Boundary. Three related notices have been published in the Fresno Bee.

Approximately 150 people attended the first public information meeting held on January 14, 1999. The Fresno Historic Preservation Commission reviewed and approved the Plan on January 25, 1999. After two joint meetings held on February 8 and February 22, 1999, the Fresno-Chandler Downtown Airport Community Roundtable, Roeding Business Park Redevelopment Project Area Committee, and the Edison-Southwest Fresno General Neighborhood Renewal Area Committee each voted to support the Plan and its Mitigated Negative Declaration and Environmental Assessment.

In addition, the Housing and Community Development Commission heard and unanimously voted to recommend approval of the Plan on March 10, 1999. The Plan was heard and approved by the Fresno County Airport Land Use Commission on March 15, 1999.

PLANNING COMMISSION ACTION

On March 17, 1999, the Fresno City Planning Commission held a public hearing to consider the Draft Plan and after consideration of environmental documents, testimony and information presented, determined that the adoption of the proposed Plan is in the best interest of the City of Fresno (Refer to the attached Planning Commission Resolution No. 11244).

ENVIRONMENTAL FINDING

The Environmental Assessment for this Plan identifies no substantial evidence in the record that the project may have a significant effect on the environment in terms of the factors considered on the environmental check list, including such factors for which minor effects have been identified. Cumulative effects of a significant nature are also not expected. The proposed project will not result in any adverse effects which fall within the "Mandatory Findings of Significance" contained in Section 15065 of the State CEQA Guidelines. The finding is therefore made that the proposed project will clearly not have a significant adverse effect on the environment. Staff therefore recommends the adoption of the Mitigated Negative Declaration for the Fresno-Chandler Downtown Airport Master and Environs Specific Plan.

ISSUE

Should the City Council take the actions specified to repeal the Fresno-Chandler Downtown Airport Environs Specific Plan (1982) and the Master Plan, Fresno-Chandler Downtown Airport (1976), and replace them with a consolidated/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan.

CONCLUSIONS AND RECOMMENDATIONS

Based upon the above background and analysis presented, it is recommended that the Council adopt of the Draft Fresno-Chandler Downtown Airport Master and Environs Specific Plan and its Mitigated Declaration and Environmental Assessment, by approving the attached resolution and ordinance which:

1. Adopt a Mitigated Negative Declaration and Environmental Assessment for the modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan.

2. Repeal the 1982 Fresno-Chandler Downtown Airport Environs Plan and 1976 Master Plan Study for the Fresno Downtown Airport, and adopt a modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan.

3. Adopt any needed amendments of Airport related property development policies and standards of the 1977 Edison Community Plan, and the 1984 General Plan to reflect the modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan. A statement will be added to these plans which

references the new Fresno-Chandler Downtown Airport Master and Environs Specific Plan as the controlling document/plan for airport information and development policies.

vms\K:\Common\PC\Fresno-Chandler-RPC2

Attachments: Draft Plan
Mitigated Negative Declaration/Environmental Assessment
Planning Commission Resolution No. 11244
Draft Council Resolution and Ordinance

RESOLUTION NO. 99-99

AN RESOLUTION OF THE CITY OF FRESNO, CONFIRMING THE APPROVAL OF THE MITIGATED NEGATIVE DECLARATION FOR THE MODIFIED/UPDATED FRESNO-CHANDLER DOWNTOWN AIRPORT MASTER AND ENVIRONS SPECIFIC PLAN, REPEALING THE MASTER PLAN, FRESNO-CHANDLER DOWNTOWN AIRPORT (1976), AMENDING AIRPORT RELATED PROPERTY DEVELOPMENT POLICIES AND STANDARDS OF THE EDISON COMMUNITY PLAN (1977) AND OF THE 1984 FRESNO GENERAL PLAN TO REFLECT THE MODIFIED/UPDATED FRESNO-CHANDLER DOWNTOWN AIRPORT MASTER AND ENVIRONS SPECIFIC PLAN.

WHEREAS, in February of 1976, by Resolution 76-211, the Fresno City Council adopted the Master Plan, Fresno-Chandler Downtown Airport, and

WHEREAS, on May 25, 1982, by Ordinance No. 82-54, the Council adopted the Fresno-Chandler Downtown Airport Environs Specific Plan; and

WHEREAS, the Edison Community Plan (1977) and the 1984 Fresno General Plan contain certain references to property development policies and standards of the 1976 Master Plan and the 1982 Environs Specific Plan; and

WHEREAS, on December 8, 1998, the Council initiated the Fresno-Chandler Downtown Airport Master and Environs Specific Plan (Plan) and the repeal and/or amendment of related documents and determined that the proposed Plan and related documents warranted further analysis consideration, and public review; and

WHEREAS, the Plan and its Mitigated Negative Declaration and Environmental Assessment have been dully noticed and have been reviewed and approved by the Planning Commission and the Fresno County Airport Land Use Commission as well as other public bodies; and

Adopted 4/13/99
Approved
Effective

99-99

WHEREAS, the Council has approved an ordinance adopting the modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan and its Mitigated Negative Declaration and Environmental Assessment and repealing the Fresno-Chandler Downtown Airport Environs Specific Plan.

NOW, THEREFORE BE IT RESOLVED that the Council of the City of Fresno, having adopted the Fresno-Chandler Downtown Airport Master and Environs Specific Plan, repeals the Master Plan, Fresno-Chandler Downtown Airport (1976) and amends the Airport related property development policies and standards of the 1977 Edison Community Plan and the 1984 Fresno General Plan to reflect the modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan.

* * * * * * * * * *

CLERK'S CERTIFICATION

STATE OF CALIFORNIA)
COUNTY OF FRESNO) ss.
CITY OF FRESNO)

I, Rebecca E. Klisch, City Clerk of the City of Fresno, certify that the foregoing resolution was adopted by the Council of the City of Fresno, California, at a regular meeting held on the 13th day of April, 1999.

AYES: Boyajian, Bredefeld, Mathys, Perea, Quintero, Ronquillo, Steitz
NOES: None
ABSENT: None
ABSTAIN: None

REBECCA E. KLISCH
City Clerk

By Rebecca E. Klisch
~~Deputy~~

APPROVED AS TO FORM:

HILDA CANTU-MONTOY
City Attorney

By _____
~~Deputy~~

BILL NO. B-25

ORDINANCE NO. 99-22

AN ORDINANCE OF THE CITY OF FRESNO, APPROVING THE MITIGATED NEGATIVE DECLARATION FOR THE MODIFIED/UPDATED FRESNO-CHANDLER DOWNTOWN AIRPORT MASTER AND ENVIRONS SPECIFIC PLAN, REPEALING THE 1982 FRESNO-CHANDLER DOWNTOWN AIRPORT ENVIRONS SPECIFIC PLAN AND ADOPTING THE MODIFIED/UPDATED FRESNO-CHANDLER DOWNTOWN AIRPORT MASTER AND ENVIRONS SPECIFIC PLAN.

WHEREAS, on May 25, 1982, by Ordinance No. 82-54, the Council adopted the Fresno-Chandler Downtown Airport Environs Specific Plan; and

WHEREAS, on December 8, 1998, the Council initiated the Fresno-Chandler Downtown Airport Master and Environs Specific Plan (Plan) and the repeal and/or amendment of related documents and determined that the proposed Plan and related documents warrant further analysis, consideration, and public review; and

WHEREAS, the Local Planning and Procedures Ordinance (LPPO) requires that specific plans must be adopted by ordinance; and

WHEREAS, the Charter of the City of Fresno permits the ordinance adopting the Fresno-Chandler Downtown Airport Master and Environs Specific Plan to be adopted by the Council on the day of its introduction; and

WHEREAS, the Plan and its Mitigated Negative Declaration and Environmental Assessment have been duly noticed and have been reviewed and approved by the Historic Preservation Commission, The Fresno-Chandler Downtown Airport Community Roundtable, Roeding Business Park Redevelopment Committee, Edison-Southwest Fresno General

Adopted 4/13/99
Approved 4/13/99
Effective 5/14/99

99-22

Neighborhood Renewal Area Committee, Housing and Community Development Commission and Fresno County Airport Land Use Commission; and

WHEREAS, the Fresno City Planning Commission, at its meeting of March 17, 1999, adopted Resolution No. 11244, as attached, recommending approval of the Mitigated Negative Declaration and Environmental Assessment for the modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan and recommending adoption of the Plan; and

WHEREAS, the Council of the City of Fresno, on April 13, 1999, held a duly noticed public hearing to consider the draft Plan, Mitigated Negative Declaration and Environmental Assessment and all written and oral evidence and testimony related thereto; and

WHEREAS, the Council finds that there is no substantial evidence in the record that the Plan may have a significant effect on the environment.

NOW, THEREFORE THE COUNCIL OF THE CITY OF FRESNO DOES ORDAIN AS FOLLOWS:

SECTION 1. The modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan and all mitigation measures as set forth in the Mitigated Negative Declaration and Environmental assessment (attached) are hereby adopted.

SECTION 2. The 1982 Fresno-Chandler Downtown Airport Environs Specific Plan is hereby repealed.

SECTION 3. Any provision in Chapter 12 of the Fresno Municipal Code which would render implementation of this ordinance infeasible shall yield to the provisions of this ordinance.

SECTION 4. Any provisions of the 1984 Fresno General Plan or the 1977 Edison Community Plan which would render implementation of this ordinance infeasible shall yield to the provisions

of this ordinance.

SECTION 5. This ordinance shall become effective and in full force and effect at 12:01 A.M. on the thirty-first day after its passage.

* * * * * * * * * *

CLERK'S CERTIFICATION

STATE OF CALIFORNIA)
COUNTY OF FRESNO) ss.
CITY OF FRESNO)

I, Rebecca E. Klisch, City Clerk of the City of Fresno, certify that the foregoing ordinance was adopted by the Council of the City of Fresno, California, at a regular meeting held on 13th day of April, 1999.

AYES: Boyajian, Bredefeld, Mathys, Perea, Quintero, Ronquillo, Steitz
NOES: None
ABSENT: None
ABSTAIN: None

REBECCA E. KLISCH
City Clerk

By Rebecca E Klisch
~~Deputy~~

APPROVED AS TO FORM:

HILDA CANTÚ-MONTOY
City Attorney

By _____
~~Deputy~~

FRESNO CITY PLANNING COMMISSION
RESOLUTION NO. 11244

The Fresno City Planning Commission, at its meeting of March 17, 1999, adopted the following resolution relative to the draft Fresno-Chandler Airport Master and Environs Specific Plan and related Mitigated Negative Declaration and Environmental Assessment.

WHEREAS, in February of 1976, by Resolution No. 76-211, the Fresno City Council adopted the Master Plan, Fresno-Chandler Downtown Airport; and

WHEREAS, on May 25, 1982, by Resolution No. 82-54, the Council adopted the Fresno-Chandler Downtown Airport Environs Specific Plan; and

WHEREAS, on December 8, 1998, the Council initiated the Fresno-Chandler Downtown Airport Master and Environs Specific Plan and the repeal and/or amendment of related documents and determined that the proposed Plan and related documents warranted further analysis, consideration, and public review; and

WHEREAS, subsequently, the Plan was reviewed and approved by the Fresno Historic Preservation Commission, the Fresno-Chandler Downtown Airport Community Roundtable, Roeding Business Park redevelopment Project Area Committee, the Edison-Southwest Fresno General Neighborhood Renewal Area Committee, and the Fresno Housing and Community Development Commission; and

WHEREAS, an Environmental Assessment relating to the draft modified/updated Fresno -Chandler Downtown Airport Master and Environs Specific Plan has been completed in compliance with the California Environmental Quality Act; and

WHEREAS, A Mitigated Negative Declaration and Environmental Assessment have been filed; and

WHEREAS, on March 15, 1999, the draft Plan and Environmental Assessment were considered by the Fresno Airport Land Use Commission (ALUC); and

WHEREAS, on March 17, 1999, the Planning Commission held a duly noticed public hearing and considered the Planning staff and Citizens Committees recommendations and testimony given in favor of and in opposition to the draft modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan and related Mitigated Negative Declaration and Environmental Assessment.

NOW THEREFORE BE IT RESOLVED that the Planning Commission has reviewed and considered the information contained in the draft modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan and related Mitigated Negative Declaration and Environmental Assessment and does hereby approve and recommend

that the Council take the following action to adopt the Plan and Final Environmental Assessment:

1. Adoption of a Mitigated Negative Declaration and Environmental Assessment for the modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan

2. Repeal of the 1982 Fresno-Chandler Downtown Airport Environs Plan and 1976 Master Plan Study for the Fresno Downtown Airport, and adoption of a modified/updated Fresno-Chandler Downtown airport Master and Environs Specific Plan

3. Adoption of any needed amendments of Airport related property development policies and standards of the 1977 Edison Community Plan and the 1984 General Plan to reflect the modified/updated Fresno-Chandler Downtown Airport Master and Environs Specific Plan.

The foregoing Resolution was adopted by the Fresno City Planning Commission on a motion by Commissioner Eckenrod and seconded by Commissioner Treadwell.

VOTING: Ayes - Alvarez, Eckenrod, Treadwell, Stone
Noes - None
Not Voting - Sterling
Absent - Civiello, Dibuduo

Nick P. Yovino, Secretary
Fresno City Planning Commission

DATED: March 17, 1999

Resolution No. 11244
Recommendation for Adoption of the Fresno-Chandler Downtown Airport Master and Environs Specific Plan and Mitigated Negative Declaration and Environmental Assessment.

LJ:\J\chanplcomresolution

County of FRESNO

Public Works & Development Services Department
Carolina Jimenez-Hogg
Director

March 31, 1999

Nick Yovino
City of Fresno
Development Department
2600 Fresno Street
Fresno, CA 93721-3604

Dear Mr. Yovino:

SUBJECT: Fresno – Chandler Downtown Airport Master and Environs Specific Plan

The Airport Land Use Commission met on March 15, 1999 and agreed to adopt the Fresno – Chandler Downtown Airport Master and Environs Specific Plan as the ALUC's Fresno – Chandler Downtown Airport Land Use Policy Plan.

If you have any questions, please call me at (559) 262-4853.

Very truly yours,

Kerry L. McCants, Secretary
Airport Land Use Commission

Joanne Striebich
Staff Analyst – ALUC

KLM:JCS:cme
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April 1, 1999

FRESNO-CHANDLER DOWNTOWN AIRPORT

MASTER AND ENVIRONS SPECIFIC PLAN

Adopted April 13, 1999

FRESNO-CHANDLER DOWNTOWN AIRPORT

Mayor
Jim Patterson

City Manager
Jeffrey Reid

City Attorney
Hilda Cantú-Montoy

City Council
Tom Boyajian
Chris Mathys - Acting President
Daniel Ronquillo
Ken Steitz - Council President
Sal Quintero
Garry Bredefeld
Henry Perea

Charles R. Hayes, Director of Transportation
Al Solis, Director, Development Department

Master Plan Task Force
Jerry G. Martinez, Airports Projects Manager
Dan Card, Airports Development Manager
Daniel J. Yrigollen, Airports Projects Supervisor
Mary Erickson, Airports Properties Specialist
Nick Yovino, Planning Manager
Rayburn Beach, Planner
Bevon Fung, Planner
Lois Johnson, Planner
Jeff Tweedie, Senior Staff Analyst,
Fresno County Public Works & Development Services Department

Shutt Moen Associates
Michael A. Shutt, P.E., Principal
Kenneth A. Brody, Senior Planner
David B. Heal, A.A.E., Senior Consultant

Valley Research and Planning Associates
Georgiena Vivian, Principal

Licciardello & Associates
Michael R. Licciardello, Principal

Table of Contents

Section A - Introduction, Purpose and Organization

INTRODUCTION 1-3
The Airport 1-3
The Fresno-Chandler Downtown Airport
Master and Environs Specific Plan 1-3
PURPOSE 3-3
ORGANIZATION 3-3

Section B - Fresno-Chandler Downtown Airport Environs Specific Plan

INTRODUCTION 1-12
PURPOSE 2-12
POLICIES 2-12
Noise 2-12
Airspace Protection 4-12
Safety 4-12
Avigation Easement and Agreement 5-12
Buyer Notification 6-12
FCH ENVIRONS PLAN CONSISTENCY REQUIREMENTS 6-12
FRESNO COUNTY AIRPORT LAND USE COMMISSION 7-12
Introduction 7-12
ALUC Membership 8-12
ALUC Powers and Duties 9-12
ALUC Land Use Plans 9-12
ALUC Plan Proposal and Review 10-12
FEDERAL REQUIREMENTS 11-12

Section C - Fresno-Chandler Downtown Airport Master Plan

OVERVIEW 1-18
Function of the Master Plan 1-18
Major Issues 1-18
Plan Revisions 2-18
Plan Drawings 2-18

Section C - Fresno-Chandler Downtown Airport Master Plan (cont.)

AIRPORT ROLE AND ACTIVITY 3-18
Airport Role 3-18
Airport Activity 4-18
Airport Accident Record 5-18
AIRFIELD DESIGN 5-18
Basic Design Factors 5-18
Proposed Runway System Configuration 7-18
Other Airfield Elements 8-18
BUILDING AREA DEVELOPMENT 9-18
Aircraft Parking Requirements 9-18
Other Aviation-Related Development 10-18
North-Side Development Potential 11-18
LAND USE COMPATIBILITY ISSUES 13-18
Compatibility Status 13-18
Compatibility Measures 15-18
MARKETING AND FINANCIAL ISSUES 17-18
Marketing Plan 17-18
Financial Issues 17-18

Section D - Tables and Figures

Table D-1 Airport/Land Use Noise Compatibility Criteria
Table D-2 Safety Compatibility Criteria
Table D-3 Capital Improvement Program

Figure D-1 (Two Runways) - Fresno-Chandler Downtown Airport Environs Plan Map
Figure D- 1 (One Runway) - Fresno-Chandler Downtown Airport Environs Plan Map
Figure D-2 (Two Runways) - FAR Part 77 Imaginary Surfaces
Figure D-2 (One Runway) - FAR Part 77 Imaginary Surfaces

Section E - Appendix

City of Fresno Mitigated Negative Declaration

SECTION A

INTRODUCTION, PURPOSE AND ORGANIZATION

SECTION A

INTRODUCTION, PURPOSE AND ORGANIZATION

1. INTRODUCTION

a. The Airport

The Fresno-Chandler Downtown Airport (FCH) began as a single landing strip on land which the W.F. Chandler family deeded to the City of Fresno in 1928 for use as a municipal airport. Commercial airline service began there in 1930. In 1947, that service was transferred over to the larger airport which the City of Fresno acquired from the federal government after World War II. FCH then became solely a general aviation airport. FCH is still owned and operated by the City of Fresno and occupies approximately 200 acres of land located just one and one-half miles west of downtown Fresno.

The principal runway (12R-30L) is 3,202 feet long, 75 feet wide and is the only lighted runway. A parallel runway (12L-30R) is 3,006 feet long, 75 feet wide and lies 300 feet away from 12R-30L. Both runways have full-length parallel taxiways. All runway and taxiway pavement is rated at 17,000 pounds for aircraft with single-wheel landing gear.

FCH is used primarily for general aviation. One small cargo carrier operates there. There are 9 general aviation-related businesses located there, offering services such as fueling, aircraft maintenance/restoration, flight instruction, charter services and rentals. Approximately 180 general aviation aircraft are based at FCH.

b. The Fresno-Chandler Downtown Airport Master and Environs Specific Plan

This plan supercedes, updates and consolidates two previous plans - a Master Plan Study for the Fresno-Chandler Downtown Airport, prepared as a part of a multi-volume study adopted in 1976; and the *Fresno-Chandler Downtown Airport Environs Plan*, adopted in 1982.

This Plan received thorough public review from the following citizen advisory committees and governmental commissions and/or groups prior to being considered for adoption by the Fresno City Council: The Fresno-Chandler Downtown Airport Round Table Citizens Group, the Edison/Southwest Fresno Citizens Planning Advisory Committee, the Roeding Business Park PAC, the City of Fresno Historic Preservation Commission, the City of Fresno Planning Commission

and the City Housing and Community Development Commission. Related actions include:

- *Environmental Document Preparation* — An *Initial Study* assessing the environmental impacts associated with adoption and implementation of the *Fresno-Chandler Downtown Airport Master and Environs Specific Plan* has been prepared, and the Fresno City Council adopted the Mitigated Negative Declaration on April 13, 1999.

- *ALUC Review* — As required by state law, the *Fresno-Chandler Downtown Airport Master and Environs Specific Plan* must be reviewed by the Fresno County Airport Land Use Commission (ALUC) for consistency with the Commission's compatibility plan. The ALUC is encouraged to update its plan to reflect facility changes and compatibility criteria recommended in this Plan.

- *Fresno City Council* — The City Council has the ultimate responsibility for adoption of the *Fresno-Chandler Downtown Airport Master and Environs Specific Plan*. The Council did adopt it on April 13, 1999.

- *FAA Review* — Copies of the *Fresno-Chandler Downtown Airport Master Plan Report* and associated *Airport Layout Plan (ALP)* drawing have been submitted to the Federal Aviation Administration for review and comment. Following city adoption of the *Fresno-Chandler Downtown Airport Master and Environs Specific Plan*, the FAA will conduct a formal internal review of the ALP. FAA approval of the ALP is a prerequisite to federal funding of airport improvements under the Airport Improvement Program.

- *Caltrans Aeronautics Program* — Implementation of the runway system modifications described in the *Fresno-Chandler Downtown Airport Master Plan Report* will require amendment of the Airport Permit issued by the California Department of Transportation Aeronautics Program.

This *Fresno-Chandler Downtown Airport Master and Environs Specific Plan* is a refinement of the *City of Fresno General Plan* (1984), the *Edison Community Plan* (1977) and the *Roeding Business Park Redevelopment Plan* (1997), and supersedes, updates and consolidates the *Master Plan for Fresno-Chandler Downtown Airport* (1976) and the *Fresno-Chandler Downtown Airport Environs Specific Plan* (1982). It incorporates the *Fresno-Chandler Downtown Airport Master Plan*, submitted to the FAA for its approval in 1998, by reference. The reader should also be aware of the *Southwest Fresno General Neighborhood Renewal Area Project Urban Renewal Plan* (1994). This Plan refines the *Edison Community Plan* (1977) and provides specific implementation measures, including land use, zoning, and property development standards, on land northeast, east and south of FCH.

2. PURPOSE

FCH is officially designated by the Federal Aviation Administration as a general aviation reliever airport for Fresno Yosemite International Airport.

As rapid growth occurs in the Fresno area and nearby counties, FCH will need to accommodate this growth while at the same time maintaining a compatible relationship with surrounding development. Accordingly, the purpose of the *Fresno-Chandler Downtown Airport Master and Environs Specific Plan* is to:

- Guide the orderly development of FCH property and facilities in order to allow FCH to fulfill its primary role as the general aviation reliever airport for the Fresno Yosemite International Airport. This includes the planned extension of Runway 12R-30L within the existing boundaries of the FCH property, and the possible closure of Runway 12L-30R within the time frame of this Plan.

- Regulate new land uses on FCH property and in the FCH environs to ensure compatibility of land uses and to prevent potential problems related to aircraft noise and safety.

- Update and consolidate all of the documents related to programs pertaining to airport compatibility and land use planning on and in the vicinity of FCH, and incorporate the recommendations set forth in the current Caltrans Airport Land Use Planning Handbook pertaining to land use, noise and safety issues.

3. ORGANIZATION

This Section A presents the introduction, purpose and organization of the *Fresno-Chandler Downtown Airport Master and Environs Specific Plan*.

Section B of this document, entitled *"Fresno-Chandler Downtown Airport Environs Specific Plan"* sets forth the criteria which the City of Fresno will use in evaluating development entitlements and plan amendments proposed in the vicinity of FCH.

Section C, entitled *"Fresno-Chandler Downtown Airport Master Plan"* is a summary of said Plan being submitted to the FAA for their approval in 1998, and is intended to guide the use and development of land within FCH property boundary in order to accommodate the short-term and long-term aviation demand of the region served by FCH.

Section D includes all tables and maps referred to in the text of this document.

Section E, the Appendix, consists of the Mitigated Negative Declaration for the *Fresno-Chandler Downtown Airport Master and Environs Specific Plan*.

SECTION B

FRESNO-CHANDLER DOWNTOWN AIRPORT ENVIRONS SPECIFIC PLAN

SECTION B

FRESNO-CHANDLER DOWNTOWN AIRPORT ENVIRONS SPECIFIC PLAN

1. INTRODUCTION

This section of the *Fresno-Chandler Downtown Airport Master and Environs Specific Plan* is the *Fresno-Chandler Downtown Airport Environs Specific Plan* (FCH Environs Plan) and sets forth the criteria which the City of Fresno will use in evaluating plan amendments and development entitlements proposed in the vicinity of the Fresno-Chandler Downtown Airport (FCH). The policies and requirements of the FCH Environs Plan apply to all land within the Airport Review Area. The Airport Review Area contains all land within the 60 or greater Community Noise Equivalent Level (CNEL) contours and/or within Safety Compatibility Zones Nos. 1, 2, 3, 4, 5 and 6, as shown on Figure D-1 (Environs Plan Map). Additionally, this section is intended to give public agencies and the general public an overview of the nature and extent of the City of Fresno's involvement in airport land use planning and the City's relationship with the Fresno County Airport Land Use Commission (ALUC) and the City's obligation to comply with certain Federal requirements relative to the property known as FCH.

This FCH Environs Plan supercedes and updates the former *Fresno-Chandler Downtown Airport Environs Specific Plan*, originally adopted by the City in 1982. The 1982 version was based upon a 1981 "preliminary" version, as adopted by the Airport Land Use Commission (ALUC Plan). The City's adopted *Fresno-Chandler Downtown Airport Environs Specific Plan* (1982) deleted certain items included in the 1981 "preliminary" plan, such as the avigation easement requirements, the density restriction standards and a proposal to establish maximum aircraft noise levels, as well as a recommendation to acquire property within the clear zones. The City adopted an abbreviated specific plan in May 1982, with the original plan with limited revisions attached as a "supporting document." The 1981 "preliminary" plan remained as the official ALUC plan for FCH.

Following the subsection below delineating the purpose of the FCH Environs Plan are specific policies and requirements dealing with noise compatibility, airspace protection, safety, avigation easements, buyer notification and plan consistency. A separate informational subsection on the role and function of the ALUC is also included.

2. PURPOSE

The purpose of the FCH Environs Plan is to (1) minimize the exposure of the public to high noise levels and safety hazards through land use controls and policies for property in the vicinity of FCH, and (2) to limit urban encroachment around FCH in order to allow for its continued viability. This Plan incorporates the recommendations set forth in the current Caltrans Airport Land Use Planning Handbook pertaining to land use, noise and safety issues. Threats to the continuation of flight operations, or to the lives, property, health, and welfare of persons on the ground shall be considered legitimate interests of the FCH Environs Plan.

3. POLICIES

a. Noise

(1) Airport/land use noise compatibility shall be evaluated in terms of the Community Noise Equivalent Level (CNEL), as defined in Title 21, Subchapter 6, of the California Code of Regulations (noise standards). Wherever used in this plan, the term CNEL shall be assumed to be an annual average.

(2) The maximum noise exposure which shall be considered acceptable for residential areas in the immediate area of FCH is 60 CNEL, as shown in the Environs Plan Map (Figure D-1). This contour matches the moderate forecast for the year 2018, as described in the *Fresno-Chandler Downtown Airport Master Plan Report* (1998). The residential area criterion establishes the baseline from which noise compatibility for other land uses shall be evaluated.

(3) The relative acceptability or unacceptability of particular land uses with respect to the noise levels to which they would be exposed is indicated in the "Airport/Land Use Noise Compatibility Criteria" matrix (Table D-1). These criteria shall be the principal determinants of whether a proposed land use is compatible with the noise impact from the airport. Special circumstances which would affect the specific proposal's noise sensitivity (e. g., the extent or lack of outdoor activity) also shall be taken into account.

(4) Any new residential use, transient lodging, school, library, hospital, nursing home, day nursery, church, auditorium or a concert hall which requires a special permit (site plan or conditional use permit) and is located within a 60 or greater CNEL contour shall be constructed to comply with Title 24 of the California Code of Regulations such that interior noise levels will measure no more than 45 CNEL. Mitigation measures must be done to achieve compliance with Title 24 requirements as recommended by a certified noise consultant. Any building

openings shall be acoustically treated.

(5) New residential development and new schools shall be prohibited within the adopted 60 CNEL contour of FCH unless the Fresno City Council makes specific findings that there is no feasible alternative to such development of the subject property and provided that the following conditions are met:

(a) The record property owner grants an avigation easement to the City.

(b) The record property owner executes an agreement in favor of the City, in a form approved by the City Attorney, whereby the property owner shall indemnify, hold harmless and defend the City and every officer and employee thereof from any and all loss, liability, damages, costs, suits or claims arising out of the location of the development within the 60 CNEL contour.

(c) New residential structures shall incorporate noise insulation in compliance with Title 24 of the California Code of Regulations such that interior noise levels are reduced to no more than 45 CNEL.

(6) Within the 65 CNEL contour, new or redeveloped schools, hospitals, nursing homes, libraries, day nurseries, churches, auditoriums, and amphitheaters shall be prohibited. New residential uses (excluding transient lodging) shall be prohibited, except as provided for in Policy No. (7), below.

(7) Existing residential uses lying within the 65 CNEL contour, that conform to the land use designations of this plan, may be remodeled in such a way that does not increase the floor space of the residence, or rebuilt if destroyed by fire, explosion or other catastrophic means, if the Council of the City of Fresno makes specific findings that there is no feasible alternative to such development of the subject property, and subject to the conditions of Policy No. 5, above. A use is considered to be destroyed if the cost of reconstruction, repairing or rebuilding would exceed fifty percent of the reasonable replacement value of the building immediately prior to the destruction.

(8) If a noise analysis, including noise monitoring, indicates that project noise exposure may be higher or lower than indicated by the Environs Plan Map (Figure D-1) due to site-specific conditions or changes in airport/aircraft operations, the noise exposure used for project evaluation may be adjusted at the discretion of the Fresno City Council.

b. Airspace Protection

(1) No structure, tree, or other object shall be permitted to exceed the height limits established in accordance with Part 77, Subpart C, of the Federal Aviation Regulations (FAR). This criterion applies unless, in the case of a proposed object or growing tree, one or more of the following conditions exist:

(a) The object would be substantially shielded by existing permanent structures or terrain in a manner such that it clearly would not affect the safety of air navigation;

(b) The FAA has conducted an aeronautical study and either determined that the object would not result in a hazard to air navigation or made recommendations for the object's proper marking and lighting as an obstruction;

(c) The object is otherwise exempted from the requirements of FAR Part 77.

In the case of an existing object, this criterion also applies unless the object exceeded the prescribed height limits prior to February 20, 1987, in which case marking and lighting will still be required.

(2) No object shall be permitted to be erected which because of height or other factors would result in an increase in the minimum ceiling or visibility criteria for an existing or proposed instrument approach procedure.

(3) The FAR Part 77 surfaces depicted on Figure D-2, "FAR Part 77 Imaginary Surfaces," shall be used in conjunction with the above airspace policies to determine whether the height of an object is acceptable.

c. Safety

(1) Land uses or land use characteristics which may affect safe air navigation or which, because of their nature and proximity to an airport, may be incompatible with the airport shall be avoided in the vicinity of FCH.

(2) The criteria which shall be used to evaluate whether a land use is acceptable with respect to its airport proximity are set forth in Table D-2, entitled "Safety Compatibility Criteria." The indicated Safety Compatibility Zones shall be used in conjunction with the Environs Plan Map (Figure D-1). The Safety Compatibility Zones shown on Figure D-1 will not be altered at such time as Runway 12R-30L is extended 184 feet within the boundaries of Airport property, as proposed by the

Fresno-Chandler Downtown Airport Master Plan (1998), as the planned runway extension was taken into account when establishing the Safety Compatibility Zones. At such time as Runway 12L-30R is closed, also per the *Master Plan*, the Environs Plan Map, "Figure D-1- Two Runways" shall be superceded by "Figure D-1 - One Runway"

(3) Land uses which attract concentrations of birds are a special concern within the traffic pattern zone of airports. In reviewing a project for safety compatibility, this possibility should be considered.

(4) Sanitary landfills can attract birds and generate airborne debris, posing a threat to aircraft operations which cannot be satisfactorily mitigated by conventional operating procedures. Landfills should, therefore, not be permitted in proximity to FCH.

d. Avigation Easement and Agreement

(1) Except when overriding circumstances exist, a condition for approval of any residential development proposal (i.e., zone change, subdivision map, conditional use permit, site plan review) within the Airport Review Area, as subsequently defined herein, shall be the dedication of an avigation easement to the City of Fresno. Avigation easements shall be required for all development proposals (commercial, industrial or residential) within the 60 CNEL contour. The avigation easement shall contain the following property rights:

(a) Right-of-flight at any altitude above acquired easement surfaces.

(b) Right to generate noise, vibrations, fumes, dust and fuel particle emissions.

(c) Right-of-entry to remove, mark, or light any structures or growths above easement surfaces.

(d) Right to prohibit creation of electrical interference, unusual light sources, and other hazards to aircraft flight.

(e) Right to prevent erection or growth of all objects above acquired easement surfaces.

The easement surfaces acquired shall be based on Part 77 of the Federal Aviation Regulations except that no easement surface less than 35 feet above ground shall be acquired.

(2) As a further condition for approval of residential development proposals within the Airport Review Area and all development proposals within the 60 CNEL contour, the Fresno City Council shall, except where overriding circumstances exist, require the property owner(s) to record a covenant providing the following:

(a) That it is understood by the owners and owners' successors in interest that the real property in question lies close to FCH and that the operation of the airport and the landing and takeoff of aircraft may generate high noise levels which will affect the habitability and quiet enjoyment of the property.

(b) That the owners covenant to accept and acknowledge the operation of FCH.

(3) The above easement, covenants, conditions and restrictions shall run with the land and shall be binding upon the present and subsequent owners of the property.

e. Buyer Notification

Buyer notification shall be accomplished by the use of real estate disclosure statements for property within the Airport Review Area. The disclosure statements shall notify the buyers of property located within the Airport Review Area of the proximity of the property to FCH and that aircraft overflights may affect the habitability and quiet enjoyment of the property.

4. FCH ENVIRONS PLAN CONSISTENCY REQUIREMENTS

a. This FCH Environs Plan is a refinement of the *City of Fresno General Plan* (1984), the *Edison Community Plan* (1977), the *Roeding Business Park Redevelopment Plan* (1997), and the *Southwest Fresno GNRA Project Renewal Plan* (1994), and supercedes, updates and consolidates the *Fresno-Chandler Downtown Airport Environs Specific Plan* (1982) and the *Master Plan* (1976). The *Edison Community Plan* (1977), the *Roeding Business Park Redevelopment Plan* (1997) and the *Southwest Fresno GNRA Project Renewal Plan* (1994) govern land uses in the Airport Review Area, and this Plan does not amend any of these land uses, but will modify the airport-related property development standards. The adopted plans are hereby amended to incorporate these new airport-related property development standards. It is the intent of the *City of Fresno General Plan* (1984), the *Edison Community Plan* (1977) and the *Roeding Business Park Redevelopment Plan* (1997) to allow light industrial uses on the airport, and the M-1, M-1-P and C-M zone districts are considered to be consistent with any of these land use designations, except for the buffer and airfield designations for which the consistent zoning shall be O (Open

Conservation), and except when the uses allowed by the zone districts conflict with existing covenants and/or lease agreements. The policies of this FCH Environs Plan pertaining to noise, safety, airspace protection, avigation easements and agreement and buyer notification shall also be applicable to land within the boundaries of FCH.

b. The *Fresno-Chandler Downtown Airport Master Plan Report* (1998), with its accompanying Airport Layout Plan, Building Plan and Airspace Plan, is incorporated into this FCH Environs Plan by reference, and made a part hereof.

c. The Airport Review Area is defined as follows: all land within the 60 or greater CNEL contours and/or within Safety Compatibility Zones 1 through 6 as shown on the FCH Environs Plan Map. The FCH Environs Plan Map is attached as Figure D-1 and incorporated herein.

d. All rezoning applications, conditional use permits, site plan reviews, variances, subdivision maps and parcel maps for property within the Airport Review Area must be consistent with the policies of this Plan, with the land use designations of the underlying adopted City plans and with the procedures specified in the City of Fresno Municipal Code.

e. The following projects, if located within the Airport Review Area, shall be referred to the Airport Land Use Commission for review: the adoption or amendment of general, community and specific plans, airport master plans, rezoning applications, zoning ordinance text amendments, and building code amendments. (ALUC review does not apply to conditional use permits, variances, subdivision or parcel maps).

f. If a parcel of land is partially within the Airport Review Area, the entire parcel is considered to be subject to the land use consistency requirements of this plan.

g. In the event that it cannot be precisely determined from the FCH Environs Plan Map whether a parcel of land is within the Airport Review Area, the determination in this regard shall be made by the Director of the Development Department. The Director's determination shall be final.

5. FRESNO COUNTY AIRPORT LAND USE COMMISSION

a. Introduction

This subsection is informational in nature and sets forth the purpose and function of the Airport Land Use Commission (ALUC) and its relationship with other public agencies.

In brief, the ALUC functions primarily in a review capacity. The following proposals, if located within the Airport Review Area, must be reviewed by the ALUC prior to final

action being taken by the City Council: plan amendments, rezoning applications, zoning ordinance text amendments, airport master plans and building regulations. If the ALUC finds a proposal to be inconsistent with its plan, the Council may overrule the ALUC by a two-thirds vote if specific findings pursuant to Section 21670 of the Public Utilities Code can be made.

The Fresno County ALUC was established by the Fresno County Board of Supervisors as directed by Section 21670 of the California Public Utilities Code. (All sections mentioned are found in the California Public Utilities Code unless otherwise specified.)

In requiring counties to establish local ALUCs, the Legislature expressed its intent in Section 21670, saying:

"It is in the public interest to provide for the orderly development of each public use airport in the state and the area surrounding these airports so as to promote the overall goals and objectives of the California Airport Noise Standards adopted pursuant to Public Utilities Code Section 21669, and prevent the creation of new noise and safety problems. It is the purpose of this article to protect public health, safety, and welfare by insuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses. In order to achieve the purposes of this article, every county in which there is located an airport which is served by a scheduled airline shall establish an airport land use commission..."

b. ALUC Membership

Under code section 21670, first enacted in 1967, the Commission consists of seven (7) members selected from the following categories:

(1) Two, representing the cities within the County, appointed by the City Selection Committee comprised of the mayors of all of the cities within the County, except that if there are any cities contiguous or adjacent to an airport served by a scheduled airline or which is operated for the benefit of the general public, at least one representative shall be appointed therefrom;

(2) Two, representing the County, appointed by the Board of Supervisors;

(3) Two, having expertise in aviation, appointed by a selection committee comprised of the managers of all of the public airports within the County;

(4) One, representing the general public, appointed by the other six members of the Commission.

Public officers, whether elected or appointed, may be appointed to serve on the Commission and shall serve as members during their terms of public office. Each member is to appoint a single proxy to represent him or her in Commission affairs and to vote on all matters when the member is not in attendance. Members serve staggered, four-year terms of office, with all terms of office ending the first Monday in May of the respective years, except that members may continue to serve until their successors are appointed.

c. ALUC Powers and Duties

Under Section 21674, the Commission has the following specific powers and duties:

(1) To assist local agencies in ensuring compatible land use in the vicinity of all new airports and in the vicinity of existing airports to the extent that the land in the vicinity of said airports is not already devoted to incompatible uses;

(2) To coordinate planning at the state, regional and local levels so as to provide for the orderly development of air transportation, while at the same time protecting the public health, safety and welfare;

(3) To prepare and adopt airport land use plans pursuant to Section 21675;

(4) To review the plans, regulations, and other actions of local agencies and airport operators pursuant to Section 21676;

(5) The powers of the Commission shall in no way be construed to give the Commission jurisdiction over the operation of any airport;

(6) In order to carry out its responsibilities, the Commission may adopt rules and regulations consistent with this article.

Of these powers and duties, the adoption of land use plans and the review of local agency plans and other proposed actions are the most important. These activities are described in more detail in the following sections.

d. ALUC Land Use Plans

With respect to the preparation and adoption of airport land use plans pursuant to Section 21675, that Section provides that the Commission shall formulate a comprehensive land use plan that will provide for the orderly growth of each public airport and the area surrounding the airport and will safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. The Commission plan shall include and be based on a long-range master plan or an airport layout plan, as

determined by the Aeronautics Program of the Department of Transportation, that reflects the anticipated growth of the airport during at least the next 20 years. In formulating a land use plan, the Commission may develop height restrictions on buildings, specify use of land, and determine building standards, including sound-proofing adjacent to airports, within the planning area. The comprehensive land use plan shall not be amended more than once in any calendar year.

Section 21675 goes on to provide that the Commission may include within its plan the area surrounding any federal military airport but that the Commission has no jurisdiction or authority over the territory or the operations of any military airport.

The Commission is required to submit to the Aeronautics Program, one copy of the plan and each amendment to the plan.

e. ALUC Plan Proposal and Review

The functions of the Commission in reviewing the plans, regulations and other actions of local public agencies and airport operators are defined in Section 21676. These functions are three-fold:

(1) To review the general plan of each local agency for consistency with the Commissions' airport land use plan. If the local agency's plan or plans are inconsistent with the Commissions' plan, the local agency is notified and is required to hold another hearing to reconsider its plans. The local agency may overrule the Commission's determination of inconsistency, after such additional hearing, by a two-thirds vote of a quorum of its governing body if it makes specific findings that the proposed plan is consistent with the purposes of the Act stated in Section 21670, i.e., that the public health, safety, and welfare is being protected by the orderly expansion of the airport or by the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within the areas around public airports, to the extent such areas are not already devoted to incompatible uses.

(2) Prior to the amendment of a general plan or specific plan or the adoption or approval of a zoning ordinance or building regulation applicable to the area covered by the ALUC land use plans, the local agency considering the amendment for adoption must first refer the proposed action to the Commission.

The Commission shall determine whether the proposed action is consistent with the Commission's adopted land use plan and shall notify the local agency of its determination. After a public hearing, the local agency, by a two-thirds vote of a quorum of its governing body, may overrule the Commission's determination of inconsistency if the agency makes

specific findings that the proposed action is consistent with the purposes of the article as outlined above;

(3) Every public agency owning an airport within the boundaries of the areas covered by adopted ALUC land use plans must refer proposed modifications of its airport master plan to the Commission for the Commission's review. The Commission is to determine whether the proposed action is consistent with the ALUC's adopted land use plan for the particular airport and to notify the referring agency of its determination. The public agency, after a public hearing, may overrule the Commission's determination of inconsistency by a two-thirds vote of a quorum of its governing body if it makes specific findings that the proposed action is consistent with the purposes of the article as outlined above.

The Commission's actions under items (2) and (3) must be taken within sixty days from the date the matter is referred to the Commission and failure to act within that time means the proposed action is deemed to be consistent with the Commission's adopted plan.

It should be noted that the Commission's review of pending land use proposals is limited to general plan and specific plan amendments, zoning ordinances (both "rezonings" and amendments to the Zoning Ordinance text) and to "building regulations". Such review does not include applications for conditional use permits or variances or subdivision or parcel maps.

It should also be noted that the Commission's powers do not include the review of existing land uses in the vicinity of airports which may be incompatible with the airport and any noise or safety hazards which the airport produces.

6. FEDERAL REQUIREMENTS

The City of Fresno, California is an airport owner obligated to operate the Airport in a safe, efficient and non-discriminatory manner subject to certain Federal regulations, policies and procedures administered by the Federal Aviation Administration (FAA). The source of these obligations includes various agreements and statutes, including, but not limited to, the following:

- Grant agreements issued under various Federal grant programs.
- Surplus airport property instruments of transfer.
- Section 308(a) of the Federal Aviation Act of 1958 (exclusive rights)
- Title VI of the Civil Rights Act of 1964.

The Airport's compliance obligations are set forth by Federal Order and are currently administered by the FAA pursuant to a handbook titled *Airport Compliance Requirements, Order 5190.6*. This document outlines the procedures to be followed for the aeronautical and non-aeronautical use of Airport land, including such actions as the leasing, disposal, development, maintenance and operation thereof. Prior to entering into any arrangement for the use of Airport property, this Federal document, as well as this FCH Environs Plan, are reviewed for applicability and related compliance requirements.

SECTION C

FRESNO-CHANDLER DOWNTOWN AIRPORT
MASTER PLAN

SECTION C

FRESNO-CHANDLER DOWNTOWN AIRPORT MASTER PLAN

1. OVERVIEW

The previous master plan for the Fresno-Chandler Downtown Airport (FCH) was a Master Plan Study prepared as part of a multi-volume study adopted in 1976, whereby both the Fresno Yosemite International Airport (then known as the Fresno Air Terminal) and FCH were studied simultaneously. The 1998 *Fresno-Chandler Downtown Airport Master Plan Report (Master Plan)* is a comprehensive examination of the current status, anticipated future use, and proposed course of development of FCH for the next 20 years. This Section C summarizes the findings and recommendations of the *Master Plan,* which has been submitted to the Federal Aviation Administration for its approval, and incorporates it in its entirety herein by reference.

a. Function of the Master Plan

The *Master Plan* serves as a framework within which individual projects can be implemented. By examining not only all components of the airport, but also the potential facility needs over a time frame of at least 20 years, the *Master Plan* helps to assure that individual improvements will properly function with other development, both existing and future.

b. Major Issues

Although the overall approach to the *Master Plan* study has been comprehensive in scope, the study has nevertheless focused on several major issues:

(1) Identification of the current and long-term roles of FCH within the two-airport system operated by the City of Fresno.

(2) Projection of potential aircraft activity levels, taking into account the effects of the planned Roeding Business Park and the overall population and economic growth of the Fresno region.

(3) Assessment of the appropriate future configuration of the runway system, including examination of possible modifications to Runway 12R-30L and closure of Runway 12L-30R.

(4) Determination of the building area facilities — fixed-base operations facilities, hangar space, etc. — and land areas needed to accommodate long-term general aviation requirements.

(5) Assessment of the development potential — both aviation-related or nonaviation — of the currently vacant land on the airport's north side.

(6) Identification of reasonable measures which should be taken to protect the airport from future incompatible development, especially to the northwest.

(7) Outlining a plan for promoting and marketing the airport to the principal user groups.

c. Plan Revisions

The airport plan drawings should be reviewed as necessary to assure that they continue to represent newly arising conditions and facility needs. The drawings also should be updated periodically to reflect new construction. A thorough review and updating of the *Master Plan* should be accomplished within seven to ten years.

d. Plan Drawings

The existing configuration and recommended future development of FCH are graphically portrayed in the following three plan drawings, which are attached to the *Master Plan*:

- **Airport Layout Plan** — The *Airport Layout Plan* (ALP) is the most important of the airport plan drawings for FCH. The drawing depicts both the existing and proposed layout of airport facilities. Included on the ALP sheet are various data blocks which provide additional details not indicated in the plan view.

- **Building Area Plan** — The *Building Area Plan* shows details of FCH's building and apron areas (tiedown locations, automobile parking, lease lines, etc.) not fully illustrated in the *Airport Layout Plan*.

- **Airspace Plan** — The purpose of the *Airspace Plan* is to define and help protect the airspace essential to the safe operation of aircraft in the vicinity of FCH. The criteria which define the limits of this airspace are established in

Federal Aviation Regulations (FAR), Part 77, *Objects Affecting Navigable Airspace*.

2. AIRPORT ROLE AND ACTIVITY

FCH is an important component of the airport system serving the greater Fresno area. FCH provides general aviation facilities and services essential to pilots based in the community, as well as to transient users, and serves as a general aviation alternative to Fresno Yosemite International Airport, allowing some general aviation activity - especially flight training - to be moved away from the region's scheduled airline airport. In this capacity, FCH is designated as a *reliever* airport in the Federal Aviation Administration's *National Plan of Integrated Airport Systems*.

a. Airport Role

(1) **Existing** — FCH currently serves multiple functions, including:

- A base for local pilots and aircraft owners, especially for those residing or working in central, northern, and southwestern areas of Fresno;
- A point of air access to visitors to the community;
- A site serving region-wide flight training needs;
- A place to conduct aviation-related business; and
- A focal point for local commercial and industrial development.

(2) **Future** — The future of FCH will predominantly be based upon enhancement of these established roles. Among the foreseeable prospects which could play a part in the airport's future development and use are:

- Increased activity by business and corporate aircraft, particularly high-performance single-engine airplanes, light-to-medium twins, and helicopters.

- Renewed emphasis on the FCH Airport as a point of community access, especially as associated with the Roeding Business Park development and the airport's proximity to the Fresno central business district.

- Expansion of aviation-related businesses serving the above users.

- A base for aviation-related community emergency services such as patrol helicopters operated by local police and sheriff's departments.

- New commercial and industrial development on the north side of airport property and nearby private lands in the Roeding Business Park area.

- Development of specialized aviation-related training facilities affiliated with a local college.

b. Airport Activity

(1) **Based Aircraft** - A thorough count in mid 1998 found a total of 183 active aircraft based at the airport. All but ten of these are single-engine, propeller airplanes. There are no based business jets. Most are parked at various fixed-based operators (FBO) facilities. For the future, several alternative forecast scenarios are envisioned:

- Over the next *10 years*, only limited growth is projected. A total of some 200 aircraft could be based at the airport in 2008 provided that at least 20 additional hangar units are constructed to meet existing unmet demand.

- If no additional facilities or services are added over the 10-to-20-year time frame, a *baseline* projection of 210 based aircraft in 2018 results.

- The opposite end of the spectrum is represented by the *enhanced growth* forecast. This activity level is predicated upon strong local, state, and national economic growth, substantial growth in the general aviation industry nationally, and aggressive actions to develop and promote the airport. If all of these factors play out in a positive manner, the airport could reach as many as 350 based aircraft by 2018.

- The *moderate growth* forecast constitutes a middle ground between these two scenarios and would result in a total of 250 based aircraft in 20 years. This activity is considered the most likely forecast level.

(2) **Transient Aircraft** — The current peak period demand for transient aircraft parking is estimated at 10 aircraft. This demand would remain constant under the baseline forecast, but would increase to some 15 spaces in the moderate growth scenario. Without aggressive marketing, the demand would remain low.

(3) **Aircraft Operations** — Total annual aircraft operations are projected to increase from an estimated 40,000 at present to 45,000 in 10 years. The 20-year forecasts range from 47,500 operations in the baseline scenario to 60,000 in the moderate growth forecast and 90,000 with the enhanced growth forecast.

- Single-engine airplanes, which currently comprise some 83% of the operational fleet mix at Fresno-Chandler Downtown Airport, will continue to generate the bulk of the airport activity. However, their percentage of the total airport operations will decline slightly in each of the 20-year forecast scenarios.

- Twin-engine airplanes are projected to increase from an estimated 4% of current operations to between 6% and 9% in 20 years.

- Helicopter operations will increase from about 12% of present operations to as much as 15% of the total in 2018.

c. Aircraft Accident Record

A record of aircraft accidents is used to assess the potential need for safety-related airfield design improvements. The National Transportation Safety Board (NTSB) records list a total of nine aircraft accidents at FCH during a 14-year period from mid-1980 to mid-1994. Of these, 4 occurred while landing, 4 during takeoff or attempted go-around and 1 while taxiing. None of the accidents resulted in fatalities.

3. AIRFIELD DESIGN

The layout of FCH runway/taxiway system is well-established and has remained physically unchanged since two runways were created from a single, large paved mat in the early 1960's. The most significant changes over the last 30+ years have been some modifications to the marked locations of the runway thresholds. Constraints of the site limit the prospects for major alterations to the airfield design. Nevertheless, there is the possibility of extending or shifting one or both of the runways to the northwest, as discussed later in this section.

a. Basic Design Factors

(1) **Design Aircraft** — Most all of the aircraft which operate at the airport are single-engine and light, twin-engine propeller-driven airplanes. However, some medium-sized, twin-engine airplanes, including some turboprops, operate at the airport at present and are projected to do so more frequently in

the future. For airfield design purposes, the Beechcraft Super King Air 200 is considered to be the *critical aircraft*; i.e., the type of aircraft that, per the FAA, "will make substantial use (500 or more annual operations) of the airport in the foreseeable future."

(2) **Runway Classification** — By both usage and design, the Airport Reference Code (ARC) for FCH Airport falls into the B-I (small airplane) classification for runways having approach visibility minimum of 3/4 mile or more.

- The ARC B-I (small) classification is intended to accommodate aircraft with approach speeds less than 121 knots, wingspans less than 49 feet, and maximum takeoff weights up to 12,500 pounds.

- Except for the wingspan of the Super King Air 200 being slightly greater than the above criterion, both the existing airfield design and the overall character of the airport's usage are consistent with the ARC B-I (small) classification.

(3) **Runway System Capacity** — Depending upon the extent of off-peak usage assumed, the existing FCH Airport runway system capacity is rated at 160,000 to 190,000 annual aircraft operations. Because of the close spacing between the two runways, their usage is interdependent. The second runway thus provides little added capacity beyond that available from a single runway.

(4) **Runway Length Requirements** — The longer of the airport's two runways is 3,202 feet in length. This length is sufficient for about 95% of small airplanes having less than 10 passenger seats. To accommodate all such airplanes, including the Beechcraft Super King Air 200, a length of 3,870 feet would be required. The effect of a shorter runway length is that some aircraft are weight restricted on hot days.

(5) **Development Constraints** — The potential for increasing the length of the FCH runways is limited by existing development.

- An existing residential area borders the airport on the southeast. Any airfield changes which would increase the impacts on this community are considered unacceptable.

- On the northwest, Whites Bridge Road and West Avenue are close-in barriers to runway system modification. The proposed construction of the Route 180 freeway will change the road system configuration in this vicinity and could eventually enable extension of the runway. For the

purposes of the present *Master Plan*, however, the existing streets are considered to be fixed barriers.

b. Proposed Runway System Configuration

(1) **Runway 12R-30L** — Runway 12R-30L is the longer of the two runways. Also, as the more southerly of the two runways, it is more convenient to the building area. For these reasons, Runway 12R-30L is the favored runway, receiving approximately 90% of the total aircraft operations.

- The existing easterly end of the runway has been relocated some 226 feet from the end of the pavement, thus making this portion of the runway technically unusable for takeoffs or landings. The proposed plan calls for returning the runway end to the end of pavement. Establishment of declared distances will be required in order to account for the less-than-standard runway safety area (RSA) and object free area (OFA) length beyond the runway end. The proposed configuration will enable the full existing pavement length to be utilized for takeoffs toward the west.

- Approximately 184 feet of new pavement is proposed to be added at the westerly end of the runway. This distance is the maximum that can be constructed while maintaining the standard 240 feet of RSA and OFA length inside the existing perimeter fence.

- The recommended modifications will increase the official published length of the runway to 3,612 feet. However, the distance actually usable for takeoffs is limited to less than this full length.

- The location of the existing displaced landing thresholds will remain unchanged.

The proposed airfield configuration, above, is one which maximizes the usable length of both Runway 12R-30L within the existing airport boundaries, but does not increase land use compatibility conflicts southeast of the airport.

(2) **Runway 12L-30R** — Runway 12L-30R is currently used by less than 10% of aircraft operations and most of this activity is by helicopters conducting training flights. The pavement has badly deteriorated and will require substantial asphalt work in order to keep the runway operational. Because of this expense and the runway's limited operational value, its closure is possible within the time frame of the *Master Plan*. Potential closure is depicted on the Airport

Layout Plan, which is subject to FAA approval. Upon determination by the Airport to close Runway 12L-30R and the implementation thereof, Figure D-1 (Environs Plan - Two Runways) will be superceded by Figure D-1 (Environs Plan - One Runway).

(2) **Instrument Approach Capabilities** — FCH has three different types of nonprecision instrument approach procedures. The procedure with the lowest approach minimums — and also the only straight-in approach — is one based upon relatively new global positioning system (GPS) technology. Improvements to this technology are expected in the future. The airport's existing minimum descent altitude is 780' MSL (503' AGL).

c. Other Airfield Elements

(1) **Taxiway System** — The existing taxiway system consists of a full-length parallel taxiway outboard of each of the two runways, meets applicable FAA standards and provides optimum runway capacity. The only changes shown on the *Airport Layout Plan* are ones associated with the potential closure of Runway 12L-30R. In these circumstances, a new north-side parallel taxiway should be built in order to maximize the amount of developable land while also providing airfield access to the area.

(2) **Helicopter Takeoff and Landing Areas** — At present, no designated helicopter takeoff and landing areas (helistops) exist on the airport. The majority of the present helicopter activity consists of training operations, and is being conducted on Runway 12L-30R. Two helistops are proposed for future development, and are shown on the *Airport Layout Plan*.

- An unlighted helistop should be established on the existing apron near the control tower building. This helistop will require elimination of most of the transient aircraft tiedowns currently located in this area.

- Upon closure of Runway 12L-30R, a helistop should be created on a portion of the pavement to serve training flights. Initially, this facility could be created by repairing a small area of the pavement and applying appropriate helistop markings. In the long term, as the north side of the airport develops, creation of lighted, concrete helistop is recommended.

4. BUILDING AREA DEVELOPMENT

The *building area* of a general aviation airport encompasses all of the airport property not devoted to runways, major taxiways, runway protection zones and safety areas, or other airfield functions. Undeveloped, nonairfield land is also included in this area. The building area at FCH Airport is split by the runways into northern and southern sections. All of the existing facilities are located in the almost fully developed southern area. Land on the north side of the field remains undeveloped.

a. Aircraft Parking Requirements

(1) **Based Aircraft Tiedowns** — Only about 20% of the 150 based aircraft spaces available on city and FBO apron areas are currently occupied. Even under the enhanced forecast, this demand is projected (at most) to double. These circumstances suggest that alternative uses for some of the apron area would be reasonable to consider.

(2) **Transient Aircraft Parking** — At present, transient aircraft parking is split between nine spaces adjacent to the terminal building and another 20 spaces near the control tower building. The latter tiedowns will be eliminated by the proposed helistop plus adjacent helicopter parking. The recommended replacement area is on the main apron. This location is close to the terminal apron and thus more readily accessible when those spaces are filled.

(3) **Aircraft Storage Hangars** — Currently, over 80% of the aircraft based at FCH are stored in hangar buildings of various types. This demand is projected to continue or even increase relative to future based aircraft demand. Various types of hangar facilities are proposed to accommodate this demand.

- The best remaining sites for new *T-hangars* are at the west end of the building area adjacent to the two existing city-owned T-hangar buildings.

- *Shade hangars* have the advantage of being well-suited to construction on existing apron pavement. Also, because of their open sides, they are visually less intrusive than T-hangars. Additional shade hangars are proposed for near mid field, adjacent to the existing two shade hangar buildings.

- *Executive hangars*, such as those in the Kearney hangar area, are rectangular in shape and sometimes can accommodate multiple small

aircraft. Sites for additional executive hangars are proposed for along the western edge of the airport.

- Large, *conventional hangars* currently house over a third of the airport's based aircraft. Although usually more economical to rent than individual hangar units, most pilots find conventional hangar space inconvenient because some aircraft typically must be moved in order to get others in and out of the hangar. If the overall airport activity levels increase as projected, much of the present conventional hangar space is expected to revert back to use as fixed base operations maintenance facilities, thus removing the space from use as aircraft storage.

(4) **Aircraft Parking Summary** — In total, the *Building Area Plan* (attached to the *Master Plan*) depicts parking space for some 368 based and transient aircraft on the south side of the field. These facilities include:

- A total of 110 new hangar spaces of various types, bringing the total hangar capacity to approximately 232;
- Approximately 106 remaining tiedown spaces; and
- Designated space for 30 transient aircraft.

b. Other Aviation-Related Development

(1) **Terminal Building** — The existing terminal building, built in 1936, houses airport offices, a pilots' briefing room, a coffee shop, and rest rooms.

- The building is capable of meeting the needs of visiting pilots and serving as a focal point of airport activity. Its major shortcoming is that it is open only during the daytime.

- The terminal's age and architectural style warrant considering the building for inclusion in local and national registers of historic places. The building's historic character should be made a key component of the marketing and promotion of the airport.

(2) **Commercial Aviation Businesses** — No additional land area is required to meet the reasonably foreseeable expansion needs of fixed-base operations (FBO) services. Better utilization of the already existing hangar and apron space will be necessary, however.

(3) **Aircraft Fueling** — Fuel service at Fresno-Chandler Downtown Airport is currently provided by a single FBO using a fuel island and storage tanks owned

by the city. In accordance with federal and state regulations, the two 10,000 gallon underground tanks were taken out of service by the end of 1998. Among the replacement options are the following:

- Replacement of the existing underground tanks in the same location;
- Aboveground tanks on the FBO leasehold connecting to the present fuel island; and
- Aboveground tanks and fueling at a new site east of the control tower building.

c. North-Side Development Potential

(1) **Land Availability** — The airport's two runways split the building area roughly in half. All existing development is on the south side. The north side consists of a contiguous area of approximately 40 acres plus a smaller parcel north of West Amador Avenue. Closure of Runway 12L-30R would increase the contiguous north-side developable area to nearly 70 acres.

(2) **Aviation-Related Demand** — Even at the enhanced growth forecast level of airport activity, little of the north side would be needed to accommodate aviation-related demand. Also, such growth, if it materializes, would be long term in nature.

- The most likely aviation-related need for land on the north side of the field would be for hangar space. Full development of the south side would provide some 232 hangar spaces, nearly 60 spaces less than the projected enhanced growth demand. Less than 15 acres of the north side would be necessary to meet this demand.

- Although the primary locations for FBO activities is on the south side, the potential exists for some major new FBO-type function to be proposed which could not be accommodated within the available south-side land or facilities. An activity of this type would need to locate on the airport's north side.

(3) **Other Potential Uses** — Much of the north side can be deemed excess to reasonably predictable aviation-related needs. The greatest financial benefit to the airport thus would be obtained through leasing of the land for nonaviation uses. Among the most promising potential uses are:

- *Light industrial activities* such as warehousing, value-added manufacturing related to local agricultural products, telemarketing operations, and centralized communications network facilities.

- A *multi-purpose training and small business center* directed at providing job training programs and fostering small or start-up businesses.

(4) **Development Constraints** — Among the constraints which must be overcome if the north-side property is to be successfully marketed are:

- The 1991 official *Airport Layout Plan* designated all property on the north-side as "Future General Aviation Expansion Area." As part of the present *Master Plan*, that area is designated on the *Airport Layout Plan* as "Available for Aviation-Related or Compatible Nonaviation Development."

- Existing *deed restrictions* pertaining to the original land acquisition from the W.F. Chandler family ("real property shall be used for Municipal purposes including airport purposes and for no other purpose.") must be broadly interpreted as allowing nonaviation uses as long as the revenues from such activities accrue directly to the airport rather than to the city general fund.

- For aviation-related purposes, airports have traditionally limited the duration of leases to no more than 20 or 30 years. Obtaining financing for development is more difficult on leased property than on land owned outright and a "short" lease term of 20 or 30 years makes amortization of the development costs tougher to achieve. If the City of Fresno is to market this property for nonaviation uses, *lease durations* of up to 50 years should be considered.

- The *Route 180 freeway extension* must be constructed to improve access to the airport vicinity and *road access* will need to be extended onto the site itself.

- *Utilities* must be further extended onto developable sites on the north side.

- The *Roeding Business Park redevelopment project* must move forward.

- Some type of initial *seed project* should be promoted to give impetus for additional development.

5. LAND USE COMPATIBILITY ISSUES

FCH and the surrounding community have coexisted for many years with few serious compatibility conflicts. Nothing in the activity forecasts or airport facility development recommendations of the *Master Plan* will significantly change this status. The existing land uses southeast of the airport are not expected to change appreciably. Of more concern is the need to assure that planned new development to the northwest will be compatible with FCH.

a. Compatibility Status

(1) **General Status** — The environs of Fresno-Chandler Downtown Airport consist of a mixture of urban and urban fringe/transitional land uses.

- To the southeast — the approach corridor for Runways 30L/R — as well as in some locations to the west, east, and south, urban-density, single-family residential uses dominate. Despite some occasional conflicts, the airport has coexisted with this long-established community for 70 years.

- To the north and northeast lie a mixture of light industrial, agricultural, and residential uses, plus a substantial amount of vacant land. Most of this land lies within Roeding Business Park redevelopment area. With few exceptions, the existing land uses are compatible with FCH.

(2) **Noise Impacts** — With its low activity volume and mostly single-engine airplane operations, noise contours for Fresno-Chandler Downtown Airport are small.

- The existing 60 and 65 Community Noise Equivalent Level (CNEL) contours both lie almost totally within the airport property line.

- Activity levels under the enhanced growth forecast would result in an approximately 3 decibel increase in the airport's CNEL contours with or without the recommended runway extension. To the southeast, the 60 CNEL contour will extend about 1,000 feet farther into the residential community than now occurs (or about to the end of the RPZ). The 65 CNEL contour will continue to be mostly on airport property.

- The small increase in runway length proposed in the *Master Plan* will enable the types of aircraft now operating at FCH to do so more efficiently, but will not accommodate larger, noisier aircraft. The

runway extension thus would have negligible effect on the airport's noise contours.

(3) **Compatibility Concerns** — A review of the airport's present and future compatibility status with respect to typical airport land use compatibility criteria reveal several concerns worthy of acknowledgment.

- The extent of development, particularly residential land uses, within the *runway protection zones* (RPZs) for Runways 30L and R is undesirable. Although not a requirement, FAA and Caltrans guidelines strongly encourage airports to own, or at least have easements on, property within the RPZs.

- Trees situated close to the approach ends of Runways 30L and R are a concern because they can grow to heights which would constitute *airspace obstructions* if not routinely checked and topped as necessary.

- Light poles and signs located at the proposed interchange between the planned Route 180 freeway and Hughes/West connector road will likely become the controlling obstacles limiting any future possibilities of a northwestward runway extension.

- Freeway on- and off-ramps are typically locations for highway-oriented commercial development. Such development at the above interchange, particularly in the southeast quadrant, could conflict with airport-related safety compatibility criteria.

- Most helicopters currently arrive and depart the airport from the northeast and also keep their flight training pattern on that side of the field. Few noise-sensitive land uses are now located in that area. Nevertheless, as helicopter activity continues to grow and new land use development takes place, compatibility conflicts could result.

b. Compatibility Measures

(1) **Acquisition of Fee Simple Title** — Although outright acquisition of the remaining private property in the Runway 30L RPZ would be desirable from an airport land use compatibility perspective, such acquisition is considered viable only in limited circumstances; specifically:

- A hardship situation in which the owner requests the city to buy the property because a private buyer cannot be found; or

- Destruction of a house by fire or other disaster.

- Available funding from FAA or FCH revenues.

(2) **Avigation Easements** — The city is encouraged to obtain avigation easements on private parcels within the Runway 30L RPZ. Avigation easements convey the following property rights to the airport owner: a right-of-way for passage of aircraft through the airspace over the property at any altitude above an imaginary surface specified in the easement, a right to subject the property to noise, vibration, fumes, dust, and fuel particle emissions associated with normal airport activity, a right to prohibit the erection or growth of any structure, tree or other object that would enter the acquired airspace, and a right to prohibit electrical interference, glare, misleading lights and other hazards to aircraft flight from being created on the property. Such acquisition is particularly important as a means of controlling the height of trees in the runway approach.

(3) **Approach Protection Easements** — Approach protection easements add to standard avigation easement conditions by restricting the types of land uses allowed on the property (residential uses could be prohibited, for example). Airport acquisition of this type of easement possibly could come into play as a means of preventing more intensive development from occurring in and near the RPZs, particularly north of the airport.

(4) **Airport Operational Policies** — Most of the types of operational policies which could be applicable as compatibility measures at FCH Airport are already in effect. Two specific actions which potentially could provide significant benefits are as follows.

- At such time as Runway 12L-30R is closed, consideration should be given to the potential benefits of locating the traffic pattern solely on the north side of the airport. Interaction with the Fresno Yosemite International Class C controlled airspace will need to be taken into account.

- With the projections of continued growth in the numbers of helicopter operations, preferred flight routes to and from the airport may need to be established so as to minimize overflight impacts and conflicts with fixed-wing aircraft traffic.

(5) **City Land Use Designations** — As the jurisdiction which controls land uses in most of the Fresno-Chandler Downtown Airport vicinity, the city of Fresno is encouraged to take these actions:

- Land use compatibility criteria outlined in the *Master Plan* should be taken into account in completion of the *General Plan* update process and in future land use decisions.

- In particular, less intensive land uses should be designated for the planned highway commercial property southeast of the future Route 180 freeway interchange with the Hughes/West connector road.

(6) **Airport Overlay Zone** — The city is encouraged to adopt an airport overlay zoning ordinance or amend Section 12-307 of the Municipal Code to incorporate compatibility measures described in Chapter 5 of the *Master Plan*. Specific provisions which should be covered include:

- Height limitations on structures;
- Other types of hazards to flight;
- Usage intensity limitations on nonresidential development;
- A listing of land uses which are specifically prohibited near the airport;
- Noise attenuation requirements on property close to the runway ends;
- Identification of areas of special compatibility concern where any change or variations to underlying zoning could result in land use conflicts with the airport; and
- Delineation of the boundaries and provisions of a buyer awareness program.

(7) **Recommendations to ALUC** — The Fresno County Airport Land Use Commission should be encouraged to review and update its compatibility plan for FCH. Specific recommendations regarding noise, safety, airspace protection, and overflight compatibility criteria are also included in Chapter 5 of the *Master Plan*.

6. MARKETING AND FINANCIAL ISSUES

Despite the recent modest turnaround in general aviation nationally, the climate in the industry remains a challenging one. To be successful, general aviation airports and businesses must actively market the facilities and services that each has to offer. The city should establish and vigorously pursue a marketing program for FCH with emphasis on promoting the roles and attracting the types of users for which the airport is best suited.

a. Marketing Plan

A list of potential marketing actions specifically applicable to FCH is included in Appendix E of the *Master Plan*. The actions are grouped into four categories focusing on based aircraft users, transient aircraft users, airport tenants and concessionaires, and the community-at-large. The city should review this list and begin steps to implement the specific actions. In most cases, it is intended that the Department of Airports be responsible for implementing and monitoring these marketing actions.

(1) **Management Actions** — To further facilitate the marketing and promotion of the airport, the following management-related actions should be considered:

- A significant portion of the airport's building area and structures is held under a long-term lease (to 2008) with the Draper estate which acts as a master leaseholder. Much of this property is underutilized. The city should endeavor to amicably terminate the Draper lease and subsequently lease airport parcels and facilities directly to aviation-oriented operators.

- The city should pursue the development of nonaviation-related businesses and uses on airport property that will not be required to meet the community's current and anticipated aeronautical needs.

- The city should market the benefits of the airport's inclusion within the Roeding Business Park redevelopment area (e.g., infrastructure development tax advantages, economic synergies created by surrounding growth, etc.).

b. Financial Issues

(1) **Capital Improvement Program** — The *Master Plan* reviews the resources available to the city for funding airport capital improvements and outlines a five-year *pro-forma* financial projection to determine the capital funding requirements. A 20-year capital improvement program listing all recommended city-sponsored projects is shown in Table D-3, entitled "Capital Improvement Program."

- The complete program totals approximately $6.9 million over the 20-year period.

- Roughly half of this total is for pavement maintenance projects.

- Of the remainder, the major expenditures are for proposed T-hangar and shade hangar construction.

- An estimated $4.2 million of the total program could be funded through the Federal Aviation Administration's Airport Improvement Program. Portions of the balance are eligible for the California Department of Transportation (Caltrans) Aeronautics Program grants.

(2) **Financial Projection** — Over the initial 5-year financial planning period assessed in Chapter 6 of the *Master Plan*, the airport's projected operating income will be insufficient to totally fund the city's share of the Capital Improvement Program costs. Supplemental funding and/or interim financing may be required to provide for the timely and cost-effective implementation of the Capital Improvement Program.

SECTION D

TABLES AND FIGURES

SECTION D

TABLES AND FIGURES

Table D-1	Airport/Land Use Noise Compatibility Criteria
Table D-2	Safety Compatibility Criteria
Table D-3	Capital Improvement Program
Figure D-1	Fresno-Chandler Downtown Airport Environs Plan Map (Two Runways)
Figure D-1	Fresno-Chandler Downtown Airport Environs Plan Map (One Runway)
Figure D-2	FAR Part 77 Imaginary Surfaces (Two Runways)
Figure D-2	FAR Part 77 Imaginary Surfaces (One Runway)

TABLE D-1
AIRPORT / LAND USE NOISE COMPATIBILITY CRITERIA
(Source: *Airport Land Use Planning Handbook,* CALTRANS, December 1993)

LAND USE CATEGORY	60-65 CNEL	65+ CNEL
Residential		
* Single-family/Multi-family residential	–	- -
* Mobile homes	–	- -
* Transient lodging	0	–
Public/Institutional		
* Schools, libraries, hospitals, nursing homes, large residential support facilities, large child day care centers, adult day care facilities	0	- -
* Churches, auditoriums, concert halls	0	- -
Transportation, parking, cemeteries	++	+
Commercial and Industrial		
Offices, retail commercial	+	0
Service commercial, wholesale commercial, warehousing, light industrial	+	0
General manufacturing, utilities, extractive industry	++	+
Agricultural and Recreational		
Cropland	++	++
Livestock breeding	0	0
Parks, playgrounds, zoos	+	0
Golf courses, public riding stables, water recreation	+	0
Outdoor spectator sports	+	0
Amphitheaters	–	- -

LAND USE ACCEPTABILITY		INTERPRETATION / CONDITIONS
++	Clearly Acceptable	The activities associated with the specified land use can be carried out with essentially no interference from the noise exposure.
+	Normally Acceptable	Noise is a factor to be considered, in that slight interference with outdoor activities may occur. Conventional construction methods will eliminate most noise intrusions upon indoor activities.
0	Conditionally Acceptable	The indicated noise exposure will cause moderate interference with outdoor activities and with indoor activities when windows are open. The land use is acceptable, on the conditions that outdoor activities are minimal and that construction features which provide sufficient noise attenuation are used (e.g., installation of air conditioning so that windows can be kept closed). Under other circumstances, the land use should be discouraged.
_	Normally Unacceptable	Noise will create substantial interference with both outdoor and indoor activities. Noise intrusion upon indoor activities can be mitigated by requiring special noise insulation construction. Land uses which have conventionally constructed structures and/or which involve outdoor activities which would be disrupted by noise should generally be avoided.
- -	Clearly Unacceptable	Unacceptable noise intrusion upon these activities will occur. Adequate structural noise insulation is not practical under most circumstances. The indicated land use should be avoided, unless strong overriding factors prevail; and the land use should be prohibited if outdoor activities are involved.
*	Acoustical Analysis Required	An acoustical analysis is required for these categories of land uses, pursuant to noise policies in the Fresno-Chandler Downtown Airport Master and Environs Plan (1998).

TABLE D-2
SAFETY COMPATIBILITY CRITERIA

DEVELOPMENT CRITERIA	(1) Runway Protection Zone	(2) Inner Safety Zone	(3) Inner Turning Zone	(4) Outer Safety Zone	(5) Sideline Safety Zone	(6) Traffic Pattern Zone
RESIDENTIAL USES - REMODELING OR RECONSTRUCTION						
Airport safety-compatibility restrictions on remodeling or reconstruction: (Restrictions do not apply in the Traffic Pattern Zone.)	Yes	Yes	Yes	Yes	Yes	No
Existing residential uses may be remodeled or rebuilt in such a way that does not increase the number of dwelling units.	Yes	Yes	Yes	Yes	Yes	N/A
In the event a residence is destroyed by fire, explosion or other catastrophic means, the following shall apply:						
▸ If the property owner wishes to sell, the City of Fresno may choose to offer to purchase the property to provide more open space in the zone.	Yes	N/A	N/A	N/A	Yes	N/A
▸ If the property owner wishes to rebuild, the residence may be rebuilt provided that:						
• the number of dwelling units are not increased,	Yes	Yes	Yes	Yes	Yes	N/A
• The Fresno City Council makes specific findings that there is no feasible alternative to the reconstruction.	Yes	N/A	N/A	N/A	N/A	N/A
▸ As conditions for reconstruction of a residence destroyed by fire, explosion or other catastrophic means:	Yes	Yes	Yes	Yes	Yes	N/A
• The record property owner shall grant an avigation easement to the City of Fresno.						
• The record property owner shall execute an agreement in favor of the City of Fresno, in a form approved by the City Attorney, whereby the property owner shall indemnify, hold harmless, and defend the City and every officer and employee thereof from any and all loss, liability, damages, costs, suits or claim arising out of the location of the development within this zone.						
• The rebuilt residential structure shall incorporate noise insulation, as necessary, to comply with Title 24 of the California Code of Regulations such that interior noise levels are reduced to no more than 45 CNEL.						
(A use is considered to be destroyed if the cost of construction, repairing or rebuilding would exceed 50% of the reasonable replacement value of the building immediately prior to the destruction.)						

TABLE D-2
SAFETY COMPATIBILITY CRITERIA

DEVELOPMENT CRITERIA	(1) Runway Protection Zone	(2) Inner Safety Zone	(3) Inner Turning Zone	(4) Outer Safety Zone	(5) Sideline Safety Zone	(6) Traffic Pattern Zone
RESIDENTIAL USES - NEW DEVELOPMENT						
Permitted on property vacant more than 1 year:	No	Yes *	Yes**	Yes**	No	Yes

* Development is permitted, subject to the following conditions:

- The record property owner shall grant an avigation easement to the City of Fresno.
- The record property owner shall execute an agreement in favor of the City of Fresno, in a form approved by the City Attorney, whereby the property owner shall indemnify, hold harmless, and defend the City and every officer and employee thereof from any and all loss, liability, damages, costs, suits or claim arising out of the location of the development within this zone.
- The new residential structure shall incorporate noise insulation, as necessary, to comply with Title 24 of the California Code of Regulations such that interior noise levels are reduced to no more than 45 CNEL.

Creation of New Residential Lots:
No new residential lots shall be created in Zones 1, 2 and 5.
New residential lots created in Zone 3 shall have a minimum size of 5 acres.
New residential lots created in Zone 4 shall have a minimum size of 2 acres.
In Zone 6, density shall be regulated by the adopted underlying community or specific plan.

NONRESIDENTIAL USES						
Maximum allowable intensity of use (people per acre) for nonresidential uses: (These land use intensities are intended to represent the maximum number of people permitted at any one time under normal circumstances. Exceptions should be considered only for infrequent special events.)	10	50	50	100	50	150

** ADMINISTRATIVE GUIDELINE -
On a case-by-case basis, the City of Fresno may also consider the application of conditions specified as applicable to Zone 2 in Zones 3 and 4 as it relates to RESIDENTIAL USES - NEW DEVELOPMENT permitted on property vacant more than one year. The application of such conditions would be subject to appeal, pursuant to the Fresno Municipal Code.

TABLE D-3
CAPITAL IMPROVEMENT PROGRAM

	Estimated Costs (in 1998 dollars)		
	Total [a]	Federal [b]	City [c]
Short-Range Projects (Within 5 Years)			
Airfield Lighting System Replacement Install electrical conduits and cans for fixtures; upgrade standby generator	$ 300,000	$ 270,000	$ 30,000
Rotating Beacon Retrofit	30,000	27,000	3,000
Underground Fuel Tank Replacement Remove two existing 10,000-gallon tanks; replace with new tanks and self-service pumps in same or new location	260,000	0	260,000
Aircraft Wash Rack Upgrade existing facility to meet current standards	70,000	63,000	7,000
South-Side Helipad and Helicopter Parking Construct unlighted helipad and adjacent helicopter parking on existing tower apron (in conjunction with apron pavement reconstruction)	Cost included with tower apron pavement maintenance		
Shade Hangar Construction (1st Phase) Construct shade hangars on existing apron near midfield	270,000	0	270,000
Pavement Maintenance Projects			
– Lease Lot 10 and tower apron: Repair and heavy coal-tar seal	240,000	216,000	24,000
– Terminal apron and taxilane: Repair and heavy coal-tar seal	70,000	63,000	7,000
– Lease Lot 12: Repair and heavy coal-tar seal	260,000	234,000	26,000
– Lease Lots 7, 8, and 9: Heavy coal-tar seal	50,000	45,000	5,000
– Runway 12R-30L, parallel taxiway, exits, and holding bays: Rejuvenating seal	130,000	117,000	13,000
– Lease Lot 6 and main apron: Repair and heavy coal-tar seal	260,000	234,000	26,000
– Airport Road/Taxilane and auto parking: Heavy coal-tar seal	30,000	15,000 [d]	15,000
– Airport Road (outside gate) and parking lot: Heavy coal-tar seal	30,000	0	30,000
Subtotal	*$2,000,000*	*$1,284,000*	*$ 716,000*
Mid-Range Projects (approximately 5 to 10 years)			
Airport Road/Taxilane Improvements Remove obstacles including power poles from along aircraft movement area	$ 40,000	$ 0	$ 40,000
Runway 12L-30R Conversion Mark runway and north-side parallel taxiway as closed; overlay portion of pavement and mark for use as interim, unlighted helipad	10,000	1,000	9,000
Runway 12R-30L Modifications Extend runway pavement approx. 184 feet northwest; extend parallel taxiway; apply pavement rejuvenating seal to existing pavement; reconfigure southwest end of runway to provide full utilization of existing pavement; modify marking and lighting to reflect new runway end locations and closure of Rwy 12L-30R	260,000	234,000	26,000
West-End T-Hangar Development (1st Phase) Remove temporary ponding basin; construct all west-end hangar taxilanes and one building	820,000	270,000	550,000

TABLE D-3
CAPITAL IMPROVEMENT PROGRAM

	Estimated Costs (In 1998 dollars)		
	Total [a]	Federal [b]	City [c]
Pavement Maintenance Projects			
– City hangar taxilanes: Rejuvenating seal	10,000	9,000	1,000
– Concrete apron: Replace joint seals	220,000	198,000	22,000
– Lease Lots 7, 8, and 9: Heavy coal-tar seal	50,000	45,000	5,000
– Airport Road/Taxilane: Heavy coal-tar seal	30,000	15,000 [d]	15,000
– Airport Road (outside gate) and parking lot: Heavy coal-tar seal	30,000	0	30,000
Subtotal	*$1,470,000*	*$ 772,000*	*$ 698,000*
Long-Range Projects (beyond 10 years)			
West-End T-Hangar Development (2nd Phase) Construct two additional T-hangar buildings	$ 850,000	$ 0	$ 850,000
Shade Hangar Construction (2nd Phase) Construct shade hangars at west end site	170,000	0	170,000
North-Side Parallel Taxiway Construct new parallel and exit taxiways on north side of Runway 12-30	440,000	396,000	44,000
North-Side Helipad Construct permanent helipad including concrete pad and lighting	30,000	27,000	3,000
Pavement Maintenance Projects			
– Lease Lot 10 and tower apron: Pulverize and reconstruct pavement	460,000	414,000	46,000
– Terminal apron and taxilane: Pulverize and reconstruct pavement	240,000	216,000	24,000
– Lease Lot 12: Pulverize and reconstruct pavement	340,000	306,000	34,000
– Lease Lot 6 and main apron: Pulverize and reconstruct pavement; also construct concrete helipad and helicopter parking pads	600,000	540,000	60,000
– Lease Lots 7, 8, and 9: Repair and heavy coal-tar seal	80,000	72,000	8,000
– Runway 12R-30L, parallel taxiway, exits, and holding bays: Rejuvenating seal	130,000	117,000	13,000
– City hangar taxilanes: Rejuvenating seal	10,000	9,000	1,000
– Airport Road/Taxilane: Repair and heavy coal-tar seal	40,000	20,000 [d]	20,000
– Airport Road (outside gate) and parking lot: Repair and heavy coal-tar seal	50,000	0	50,000
Subtotal	*$3,440,000*	*$2,117,000*	*$1,323,000*
MASTER PLAN TOTAL	*$6,910,000*	*$4,173,000*	*$2,737,000*

[a] Estimated construction costs are based upon a preliminary assessment of construction requirements. Actual costs will depend upon detailed designs and specifications. Engineering costs and contingencies are included.

[b] Federal funding for eligible projects (or eligible portions of projects) is calculated in accordance with current federal laws at 90% of project cost. Local share is 10%. State funds could be used on many projects in lieu of federal funds.

[c] The Caltrans Aeronautics Program matching grant program can be used to reduce the local share of FAA grants. The state match equals 5% of the federal grant amount (i.e., 4.5% of the total project cost on fully eligible projects). Thus, the estimated $2,737,000 of total city costs could be reduced by approximately $209,000 (5% of the $4,173,000 federal share) through receipt of Caltrans matching grants.

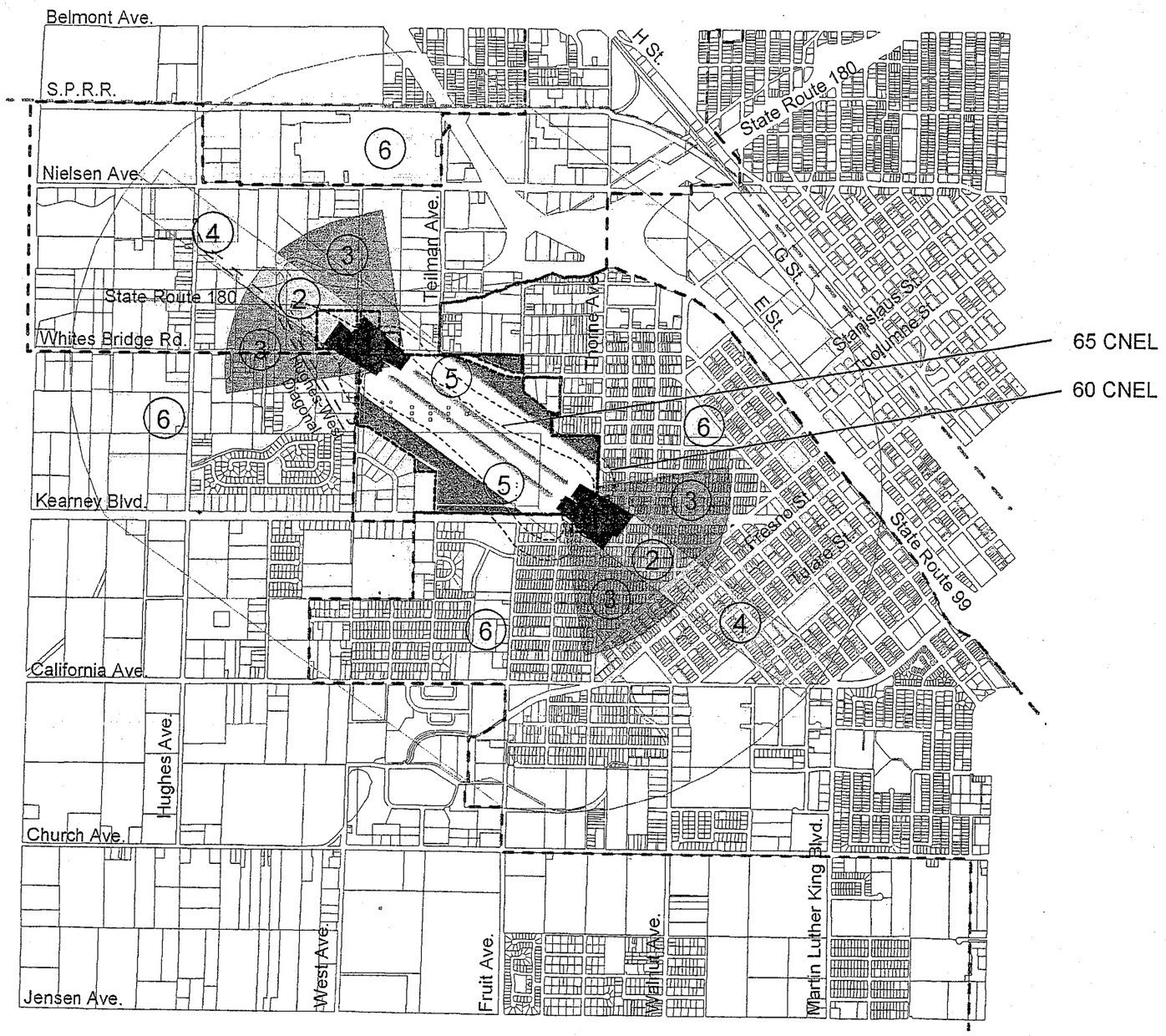
[d] Parking lot and nontaxilane portion of project not federal-grant eligible.

Source: Shutt Moen Associates (September 1998)

FRESNO-CHANDLER DOWNTOWN AIRPORT ENVIRONS PLAN

Figure D-1 (2 Runways)

NOTE: This Plan will be superceded by ENVIRONS PLAN, Figure D-1 (1 Runway) at such time as Runway 12L/30R is closed.



1 RUNWAY PROTECTION ZONE
2 INNER SAFETY ZONE
3 INNER TURNING ZONE
4 OUTER SAFETY ZONE
5 SIDELINE SAFETY ZONE
6 TRAFFIC PATTERN ZONE

Airport Property Line
Roeding Business Park Development Area
Edison Community Plan Area
Southwest Fresno GNRA Project Area
CNEL Moderate Forecast - Year 2018
Runways

Airport

N

1000 0 1000 2000 Feet

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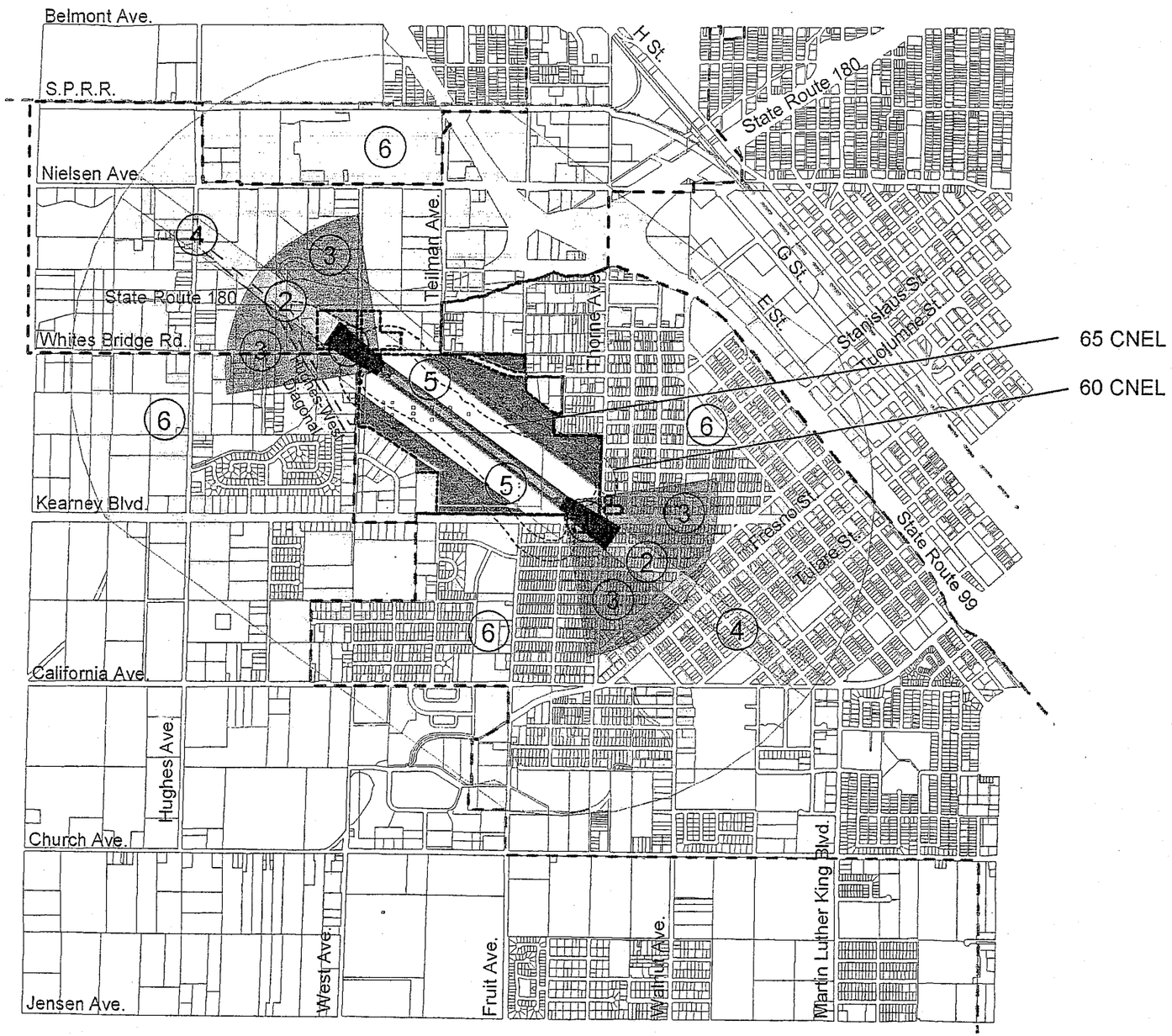

FRESNO-CHANDLER DOWNTOWN AIRPORT ENVIRONS PLAN

Figure D-1 (1 Runway)

NOTE: This Plan will supercede ENVIRONS PLAN, Figure D-1 (2 Runways) at such time as Runway 12L/30R is closed.

1. RUNWAY PROTECTION ZONE
2. INNER SAFETY ZONE
3. INNER TURNING ZONE
4. OUTER SAFETY ZONE
5. SIDELINE SAFETY ZONE
6. TRAFFIC PATTERN ZONE

- Airport Property Line
- Roeding Business Park Development Area
- Edison Community Plan Area
- Southwest Fresno GNRA Project Area
- CNEL Moderate Forecast - Year 2018
- Runway
- Airport

N

1000 0 1000 2000 Feet

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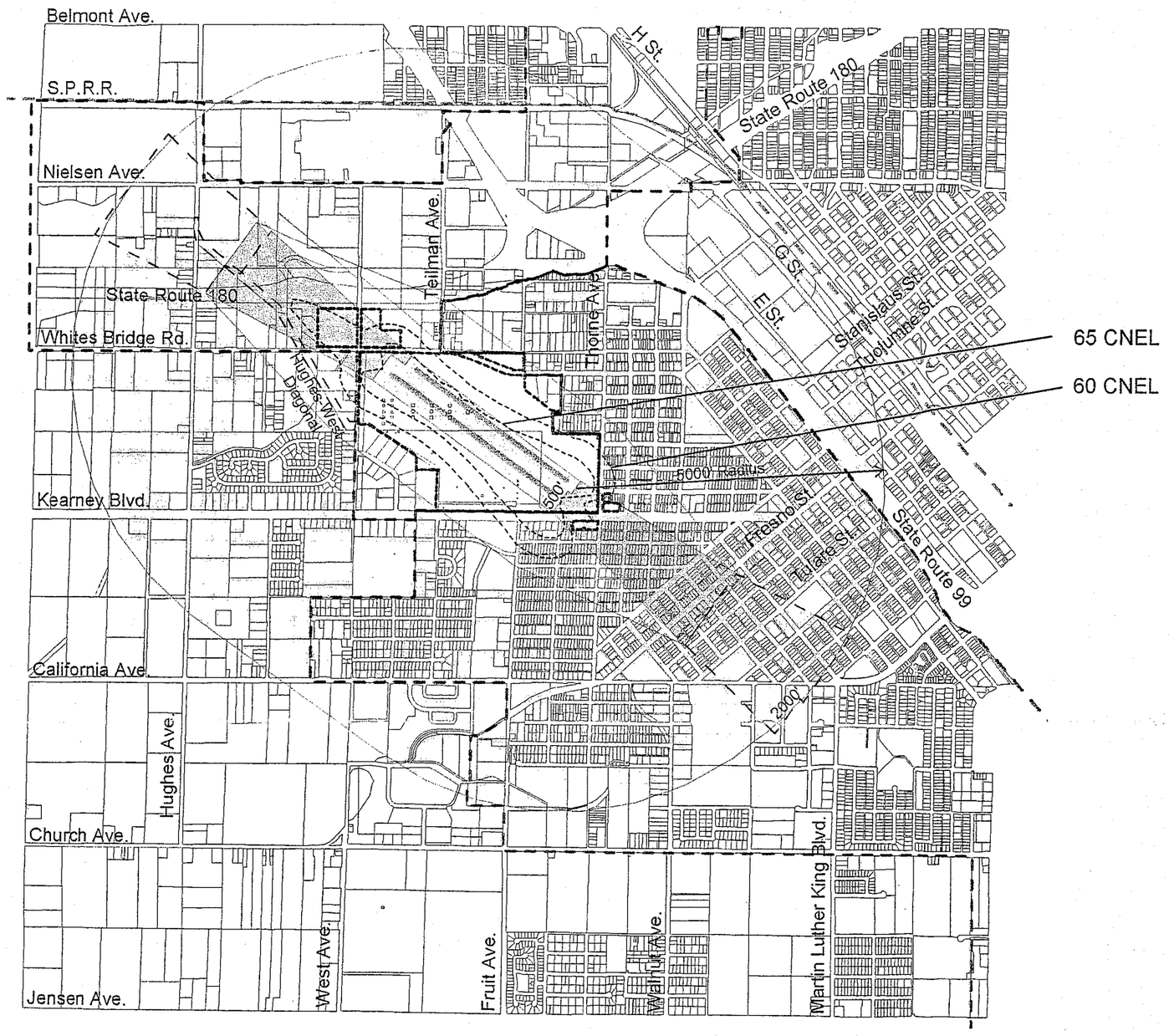
FRESNO-CHANDLER DOWNTOWN AIRPORT FAR PART 77 IMAGINARY SURFACES

Figure D-2 (2 Runways)

NOTE: This Plan will be superceded by FAR PART 77 IMAGINARY SURFACES, Figure D-2 (1 Runway) at such time as Runway 12L/30R is closed.



- Primary Surface
- Approach Surface - 20:1
- Transitional Surface - 7:1
- Horizontal Surface (150 feet above runway elevation)
- Approach Surface (150+ feet above runway elevation)
- Airport Property Line
- Roeding Business Park Development Area
- Edison Community Plan Area
- Southwest Fresno GNRA Project Area
- CNEL Moderate Forecast - Year 2018
- Runways

N

1000 0 1000 2000 Feet

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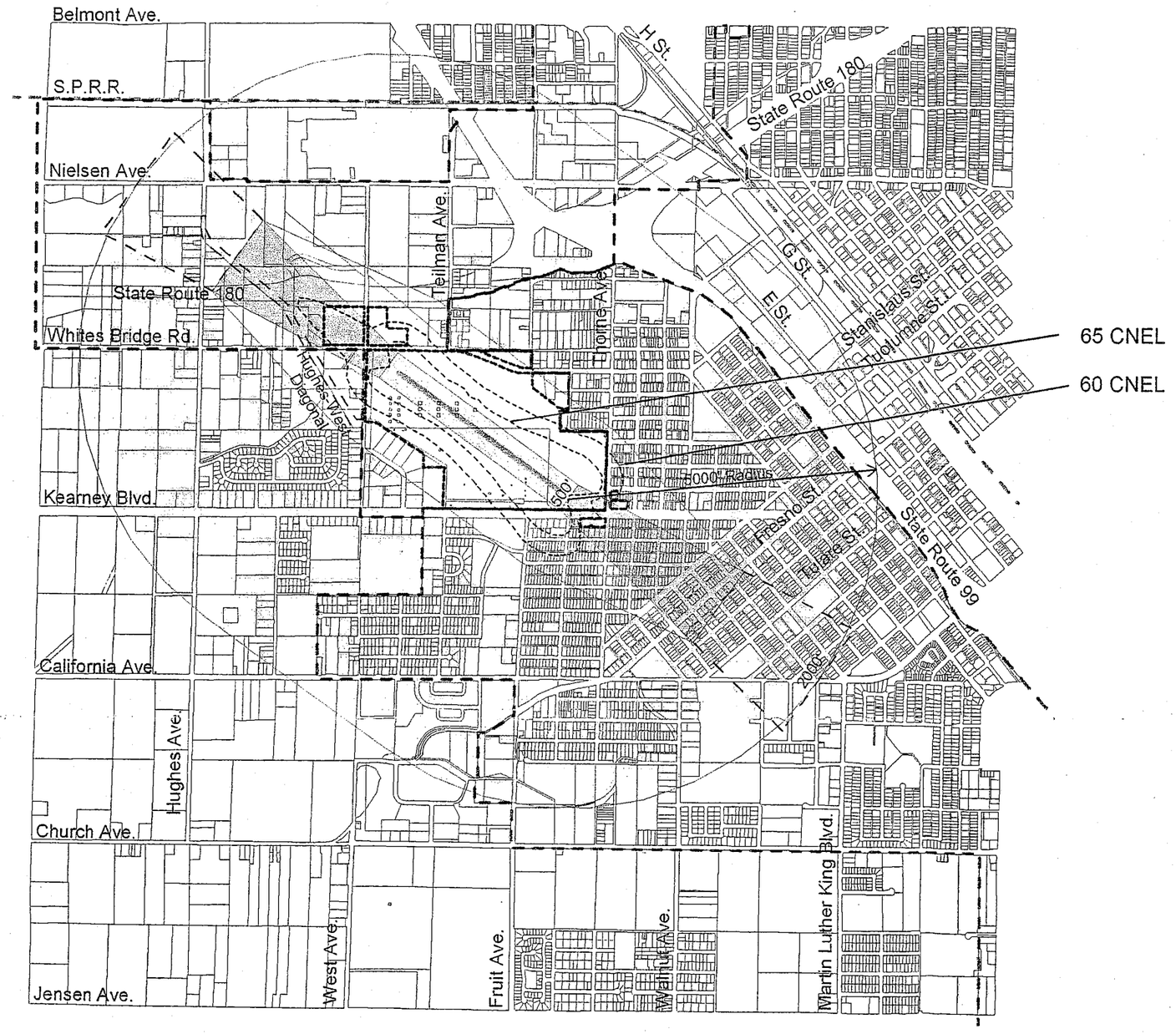
FRESNO-CHANDLER DOWNTOWN AIRPORT FAR PART 77 IMAGINARY SURFACES

Figure D-2 (1 Runway)

NOTE: This Plan will supercede FAR PART 77 IMAGINARY SURFACES, Figure D-2 (2 Runways) at such time as Runway 12L/30R is closed.



- Primary Surface
- Approach Surface - 20:1
- Transitional Surface - 7:1
- Horizontal Surface (150 feet above runway elevation)
- Approach Surface (150+ feet above runway elevation)
- Airport Property Line
- Roeding Business Park Development Area
- Edison Community Plan Area
- Southwest Fresno GNRA Project Area
- CNEL Moderate Forecast - Year 2018
- Runway

N

1000 0 1000 2000 Feet

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SECTION E

APPENDIX

City of Fresno Mitigated Negative Declaration

CITY OF FRESNO MITIGATED NEGATIVE DECLARATION

Initial Study is on file in the Development Department City Hall, 2600 Fresno Street, Fresno, California 93721 (559) 498-4441	Environmental Assessment Number:
APPLICANT: City of Fresno Airports Department	Assessor's Parcel Number:

RECEIVED
99 FEB 17 PM 1:21
CITY CLERK FRESNO CA

PROJECT DESCRIPTION AND LOCATION: Proposed adoption of a modified/updated Fresno-Chandler Downtown Airport Master and Environs Plan and any needed amendments of Chandler Airport related property development policies and standards of the Edison Community Plan (1977), Roeding Business Park Redevelopment Plan (1997), Southwest Fresno General Neighborhood Renewal Project Plan (1969), and the Fresno General Plan (1984). The project also includes amendment to the Fresno County Airport Land Use Commission's Fresno-Chandler Airport Land Use Policy Plan in order to reflect the modified/updated Fresno-Chandler Downtown Airport Master and Environs Plan. The primary purpose of the Fresno-Chandler Master and Environs Plan is to minimize the exposure of the public to noise and safety hazards through land use controls and policies for the property in the vicinity of Fresno-Chandler Airport, and to limit urban encroachment around the Airport in order to allow for its continued viability. The Plan also specifies improvements to the airport and airport property.

Filed with:
REBECCA E. KLISCH, City Clerk
2nd Floor - City Hall
2600 Fresno Street
Fresno, California 93721-3603

The proposed project has been evaluated with respect to each item on the attached environmental checklist. This completed checklist reflects comments of any applicable responsible agencies and research and analysis conducted to examine the interrelationship between the proposed project and the physical environment. The information contained in the Environmental Assessment Application, the checklist, and any attachments to the checklist, combine to form a record indicating that an initial study has been completed in compliance with the State CEQA Guidelines and the California Environmental Quality Act.

Any rating of "2" on the checklist indicates that a specific adverse environmental effect has been identified in a category which is of sufficient magnitude to be of concern. Such an effect may be inherent in the nature and magnitude of the project or may be related to the design and characteristics of the individual project. Effects rated in this manner are not sufficient in themselves to require the preparation of an Environmental Impact Report and/or have been mitigated to the extent feasible.

All new development activity and many non-physical projects contribute directly or indirectly toward a cumulative impact on the physical environment. The incremental effect contributed by this project toward such a cumulative effect is not considered substantial in itself.

The proposed project is not expected to result in any significant adverse effects in terms of the factors considered on the environmental checklist, including any such factors for which minor effects have been identified. Cumulative effects of a significant nature are also not expected. The proposed project will not result in any adverse effects which fall within the "Mandatory Findings of Significance" contained in Section 15065 of the State CEQA Guidelines. The finding is therefore made that the proposed project will clearly not have a significant adverse effect on the environment.

This Mitigated Negative Declaration will be deemed final and effective if no appeal is filed in the manner specified by Section 12-505 of the Fresno Municipal Code.

INITIAL STUDY PREPARED BY:
Georgiena M. Vivian, Vice President
VRPA Technologies

DATE: February 16, 1999

SUBMITTED BY:

RAYBURN R. BEACHUM, Senior Planner
DEVELOPMENT DEPARTMENT

LJ:lel:\K\Common\MSC\Chandler-MND

City of Fresno

Initial Study/Environmental Assessment of the
FRESNO-CHANDLER DOWNTOWN
AIRPORT MASTER AND ENVIRONS PLAN
AND AMENDMENTS TO CHANDLER AIRPORT RELATED
PROPERTY DEVELOPMENT POLICIES AND STANDARDS
OF OTHER ADOPTED PLANS GOVERNING THE PROJECT AREA

Prepared for:
City of Fresno Development Department
Fresno City Hall
2600 Fresno Street
Fresno, CA 93721
(559) 498-4441

Prepared by:

VRPA Technologies
4746 W. Jennifer, Suite 103
Fresno, CA 93722-6422
(559) 271-1200
FAX (559) 271-1269
e-mail: VRPAFO@aol.com

February 17, 1999

INTRODUCTION

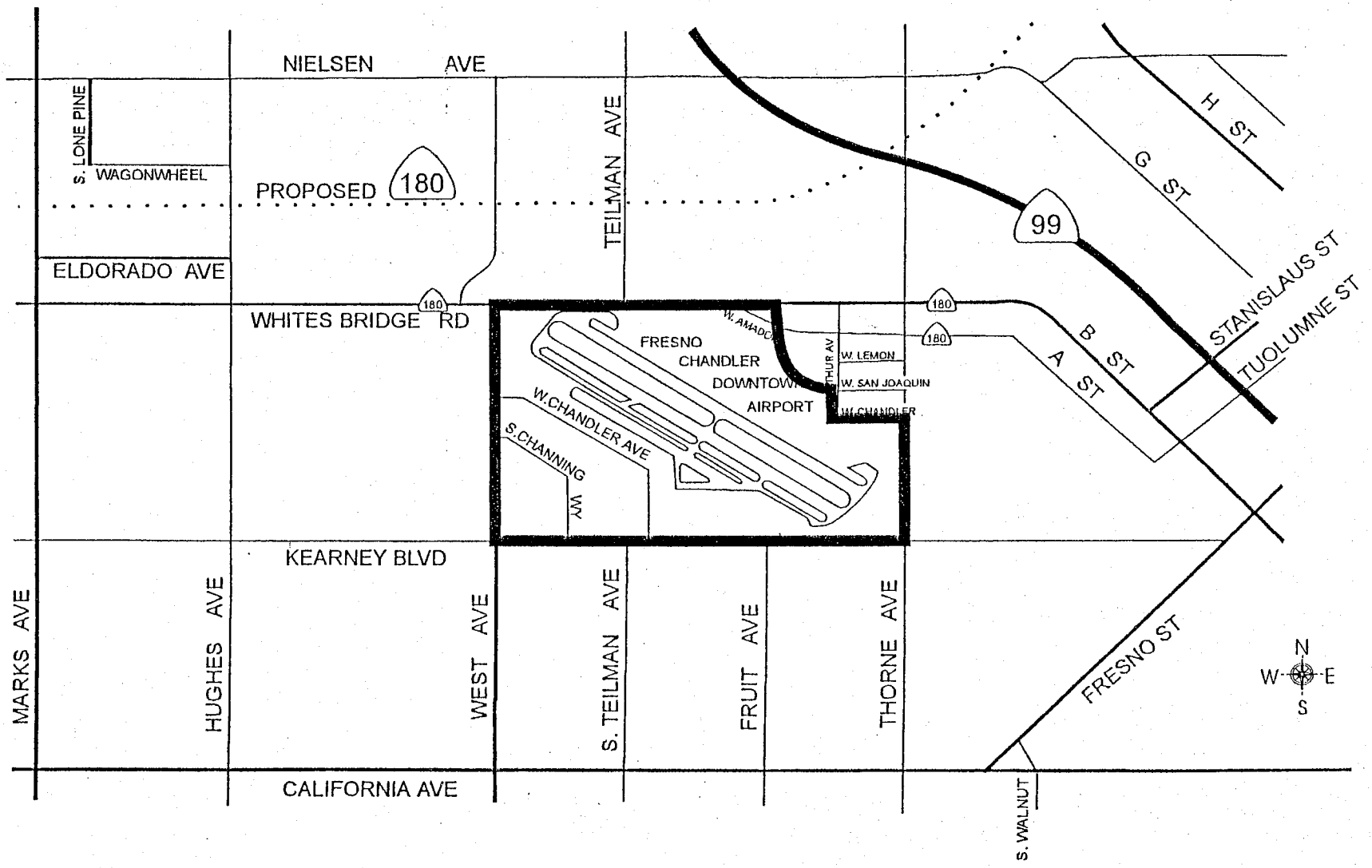
The *Fresno-Chandler Downtown Airport Master Plan Report* (1998), with its accompanying Airport Layout, Building, and Airspace Plans, is incorporated into the *Fresno-Chandler Downtown Airport Master and Environs Plan* by reference. The Plan focuses on the following issues:

- the identification of the current and long-term roles of the Fresno-Chandler Downtown Airport within the two-airport system operated by the City of Fresno;
- a projection of potential aircraft activity levels, taking into account the effects of the planned Roeding Business Park and the overall population and economic growth of the Fresno region;
- an assessment of the appropriate future configuration of the runway system, including examination of possible modifications to Runway 12R-30L and closure of Runway 12L-30R (this would establish a runway length within the currently owned airport property that would better accommodate aircraft presently using the Airport);
- a determination of the building area facilities-fixed base operations facilities, hangar space, etc., and land areas needed to accommodate long-term general aviation requirements;
- an assessment of the development potential, both aviation related and non-aviation related, of the currently vacant land on the Airport's north side;
- the identification of reasonable measures that should be taken to protect the Airport from future incompatible development especially to the northwest; and
- a plan for promoting and marketing the Airport to the principal user group.

The Project is located in the southwestern portion of the City of Fresno southwest of State Routes 99 and 180 (reference Exhibit 1). Based upon information contained in the Plan, Fresno-Chandler Downtown Airport is expected to accommodate moderate increases in small aircraft operations through 2018.

The Initial Study/Environmental Assessment Checklist below identifies those environmental categories that the Project may have an effect upon. An explanation of ratings is included in the Checklist. Following the Checklist is the Initial Study and Mitigation Monitoring Program which addresses each of the items noted in the Checklist that were found to 1) have no "significant" effect but should be addressed in the Initial Study; and 2) have a "moderate significant" effect possibly requiring the application of mitigation measures.

Fresno - Chandler Downtown Airport Project Area



Project Location Map

LEGEND:

Street/Highway Classification

Collector
Arterial
Freeway

Project Location

VRPA TECHNOLOGIES

EXHIBIT 1

INITIAL STUDY/ENVIRONMENTAL ASSESSMENT CHECKLIST

	1.0	**TOPOGRAPHIC, SOIL, GEOLOGIC CONSIDERATIONS**
1	1.1	Geologic hazards, unstable soil conditions
1	1.2	Adverse change in topography or ground surface relief
1	1.3	Destruction of unique geologic or physical features
1	1.4	Increased water erosion
	2.0	**AIR QUALITY**
2	2.1	Substantial indirect source of pollution (large vehicle generator)
2	2.2	Direct on-site pollution generation
1	2.3	Generation of objectionable odors
1	2.4	Generation of dust except during construction
1	2.5	Adverse local climatic changes
	3.0	**WATER**
1*	3.1	Insufficient ground water available for long-term project use
1	3.2	Use of large quantities of ground water
1	3.3	Wasteful use of ground water
2	3.4	Pollution of surface or ground water supplies
1	3.5	Reduction in ground water recharge
	4.0	**PLANT LIFE**
1	4.1	Reduction of the numbers of any unique, rare, or endangered species
1	4.2	Reduction in acreage agricultural crop
1	4.3	Premature or unnecessary conversion of prime agricultural land
	5.0	**ANIMAL LIFE**
1	5.1	Reduction in the numbers of any rare, unique, or endangered species
1	5.2	Deterioration or displacement of valuable wildlife habitat
	6.0	**HUMAN HEALTH**
	7.0	**NOISE**
1	7.1	Increases in existing noise levels
2	7.2	Exposure to high noise levels
	8.0	**LIGHT AND GLARE**
1*	8.1	Production of glare, which will adversely affect residential areas
1	8.2	Exposure of residences to high levels of glare
	9.0	**LAND USE**
1	9.1	Incompatibility with adopted plans and policies
1	9.2	Acceleration of growth rate
1	9.3	Induces unplanned growth
1*	9.4	Adverse change in existing or planned area characteristics
	10.0	**TRANSPORTATION AND CIRCULATION**
1*	10.1	Generation of vehicle traffic sufficient to cause capacity deficiencies on existing street system
2	10.2	Cumulative increase in traffic on a major street for which capacity deficiencies are projected
1	10.3	Specific traffic hazard to motorists, bicyclists, or pedestrians
1	10.4	Routing of nonresidential traffic through residential area
1	10.5	Insufficient or poorly located parking
1*	10.6	Substantial increase in rail and/or air traffic
	11.0	**URBAN SERVICES**
1	11.1	Availability of fire protection
1	11.2	Lack of emergency vehicle access
1	11.3	Adequacy of design for crime prevention
1	11.4	Overcrowding of school facilities
1	11.5	Availability of water mains of adequate size
1	11.6	Availability of sewer lines of adequate capacity
1*	11.7	Availability of storm water drainage facilities (on or off site)
1	11.8	Availability of adequate park and recreation areas
1	11.9	Unusually high solid waste generation
	12.0	**HAZARDS**
1	12.1	Risk of explosion or release of hazardous substances
1	12.2	Site subject to flooding
1	12.3	Adverse change in course of flow of flood waters
2	12.4	Potential hazards from aircraft accidents
1	12.5	Potential hazards from landfill and/or toxic waste sites
	13.0	**AESTHETICS**
1	13.1	Obstruction to public or scenic vista or view
1	13.2	Creation of aesthetically offensive conditions
1*	13.3	Removal of street trees or other valuable vegetation
1	13.4	Architectural incompatibility with surrounding area
	14.0	**HISTORICAL/ARCHAEOLOGICAL**
1	14.1	Removal of historic building, disruption of archaeologic site
1*	14.2	Construction or activity incompatible with adjacent historic site
	15.0	**ENERGY**
1*	15.1	Use of substantial amounts of fuel or energy
1	15.2	Substantial increase in demand upon existing sources of energy
1	15.3	Wasteful use of energy

Explanation of Ratings

"0" Insufficient Information

Insufficient information is available to determine the potential environmental effects which may result from the proposed project in this category.

"1" No Significant Environmental Effect

The proposed project will not have an adverse environmental effect in this category, or any such effect is not substantially unusual or of undesirable magnitude. This rating is also utilized in cases where the category is not applicable to the particular project under consideration.

"2" Moderate Environmental Effect

The proposed project will have an adverse environmental effect in this category, which is of sufficient magnitude to be of specific concern. However, this effect is not substantial enough in itself to require the preparation of an Environmental Impact Report.

"3" Significant Adverse Environmental Effect

The environmental effect identified in this category substantiates in itself or contributed toward a finding that the proposed project has a potentially significant adverse effect on the environment sufficient to require the preparation of an Environmental Impact Report.

* Addressed in Initial Study

INITIAL STUDY
AND MITIGATION MONITORING PROGRAM

PROJECT DESCRIPTION

The proposed Project modifies/updates the *Fresno-Chandler Downtown Airport Master and Environs Plan* and any needed amendments of Chandler Airport related property development policies and standards of the *Edison Community Plan* (1997), *Roeding Business Park Redevelopment Plan* (1997), *Southwest Fresno General Neighborhood Renewal Project Plan* (1969), and the *Fresno General Plan* (1984). The Project also includes amendments to the Fresno County Airport Land Use Commission's *Fresno-Chandler Airport Land Use Policy Plan* in order to reflect the modified/updated *Fresno-Chandler Downtown Airport Master and Environs Plan.* The amendments provide for modest extension of the principal; runway (12R-30L), elimination of the secondary runway (12L-30R), creation of approximately 70 acres of airport compatible development land on the northern portion of the current Fresno-Chandler Downtown Airport property, and a capital improvements program to accommodate moderate increases in small aircraft operations through 2018.

The primary purpose of the Fresno-Chandler Master and Environs Plan is to minimize the exposure of the public to noise and safety hazards through land use controls and policies for the property in the vicinity of Fresno-Chandler Airport, and to limit urban encroachment around the Airport in order to allow for its continued viability.

The Fresno-Chandler Downtown Airport is an approximately 200-acre facility owned and operated by the City of Fresno, generally bounded by Kearney Boulevard to the south, Thorne Avenue to the east, Whites Bridge Road to the north, and West Avenue to the west (reference Exhibit 1). Existing urban uses, primarily residential, occupy triangles adjacent to the Airport property of Kearney and West, and Thorne and Whites Bridge. However, the area influenced by Fresno-Chandler Downtown Airport operations overlay most of existing southwest Fresno. Development and use of property within the Airport boundaries are currently guided by the *Master Plan Study for the Chandler Downtown Airport* (1976). Development and use of property influenced by the Airport operations are directed by the policies, standards, and guidelines of the *Fresno-Chandler Downtown Airport Environs Plan* (1982). This Project would amend those plans.

The Airport facility is located within the boundaries of the *Edison Community Plan,* the *Southwest Fresno General Neighborhood Renewal Plan, and* the *Roeding Business Park Redevelopment Plan* (1997) area. These plans provide both general and specific land use and development policies and guidelines for the southwest portion of the Fresno Metropolitan Area. The proposed Plan does not amend the land use and circulation elements of these plans.

Section B of the proposed Plan revises the Environs Plan. Section C revises the Master Plan. Section D includes tables and figures related to land use compatibility within the Airport environs and proposed Airport capital improvements on the Airport property to meet forecasted Airport operations needs. The salient elements of these Sections are as follows:

Section B - *Fresno-Chandler Downtown Airport Environs Specific Plan* (1998):

- Includes **Policies** to be used as guidelines to land use compatibility in relation to:
  - anticipated **noise** generated as a result of Airport operations;
  - airspace protection to assure that vegetation and structures do not interfere with aircraft operations;
  - general **safety** compatibility of Airport operations and adjoining land uses;
  - acquisition or dedication of **avigation easements** to minimize legal conflicts related to Airport operations and surrounding land uses; and
  - protection of **buyers** through **notification** of potential conflicts related to Airport operations.

- Includes **Consistency Requirements** in relation to:
  - referencing **refinements** to other adopted plans, which would be made by adoption of the *Fresno-Chandler Downtown Airport Environs Specific Plan*;
  - **incorporating** the accompanying *Fresno-Chandler Downtown Airport Master Plan* into the Environs Plan;
  - defining the **Airport Review Area** subject to compatibility analysis;
  - specifying that development entitlements within the Airport Review Area must **conform** to the plan;
  - providing for **consistency** of applications for development entitlements with the land use designations of the plan; and
  - referring items to the **Airport Land Use Commission** for review;

- Defines the roles and responsibilities of the **Fresno County Airport Land Use Commission;** and

- Clarifies the City of Fresno's obligations to meet **Federal Requirements.**

Section C - *Fresno-Chandler Downtown Airport Master Plan* (1998):

- Provides an **Overview** of the *Master Plan* including descriptions of its function, major issues, plan revisions, and plan drawings;

- Designates the Fresno-Chandler Downtown Airports **role** as a reliever airport to Fresno Yosemite International Airport to serve small aircraft, flight training, and business development needs with **activity** anticipated to increase in the future at a rate which may depend upon investment and marketing;

- Identifies **airfield design** criteria, capacity, and constraints and **proposed runway system configuration** including modest extension of the principal runway (12R-30L) and closure and reuse of the secondary runway (12L-30R) to support revenue generating private development to support Airport operations;

- Proposes **other airfield** improvements including a revised **taxiway system** and helicopter takeoff and landing areas;

- Proposes **building area development** including **aircraft parking** capital improvements, retention of the historically significant **terminal building**, alternatives for **aircraft fueling**, **north side development potential** (i.e., nearly 70 acres) for light industrial or multipurpose training and small business center uses, and **development constraints** which should be addressed to realize development potential;

- Land use compatibility issues and operational policies to minimize conflicts; and

- **Marketing and financial issues**.

Section D - Tables and Figures includes:

- Airport/Land Use Noise Compatibility Criteria;

- Safety Compatibility Criteria;

- Planned Land Use Consistency Table;

- Capital Improvements Program (Short-, Mid-, and Long-Range);

- Fresno-Chandler Downtown Airport Environs Plan Map; and

- FAR Part 77 Imaginary Surfaces.

EXISTING CONDITIONS AND ENVIRONMENTAL BACKGROUND INFORMATION

The Fresno-Chandler Downtown Airport began as a single landing strip on land which the W.F. Chandler facility deeded to the City of Fresno in 1928 for use as a municipal airport. Commercial airlines served the Airport from 1930 to 1947 when the City of Fresno acquired what is now Fresno Yosemite International Airport from the federal government after World War II. Since that time the Fresno-Chandler Downtown Airport has operated as a general aviation airport serving small aircraft. Its continued use is recognized by the *1984 Fresno General Plan* (Final EIR 10085), the *Edison Community Plan*, the *Southwest Fresno General Neighborhood Renewal Area Project Urban Renewal Plan* and the *Fresno-Chandler Downtown Airport Land Use Policy Plan* (County of Fresno, 1985).

In addition, the *Roeding Business Park Redevelopment Plan and Final EIR* provide limited assessment of operations and improvements at the Fresno-Chandler Downtown Airport.

Bordering Property Information

Properties to the north of the Airport primarily consist of industrial, residential, public, and vacant uses. To the south, industrial, public, residential, agricultural, and commercial uses can be found. East of the Airport, residential, commercial, vacant and public uses are found, while to the west, vacant, industrial, and residential uses are found (reference Exhibit 2). Planned land uses, including the Airport and surrounding properties, are shown in Exhibit 3.

Environmental Evaluation

The consultant has reviewed the above referenced plan documentation, related environmental studies and has consulted with affected agencies. It has been concluded that environmental conditions and potential adverse effects of the continued development and operation of the Fresno-Chandler Downtown Airport are not significant with implementation of recommended mitigation measures. Approval of the Project may continue to contribute to minimal environmental effects associated with industrial, commercial and transportation activities. However, continued development of the Airport property, including private development of approximately 70 acres of Airport property that will generate revenues to enhance operations and environmental mitigation, will result in a positive impact upon the environment.

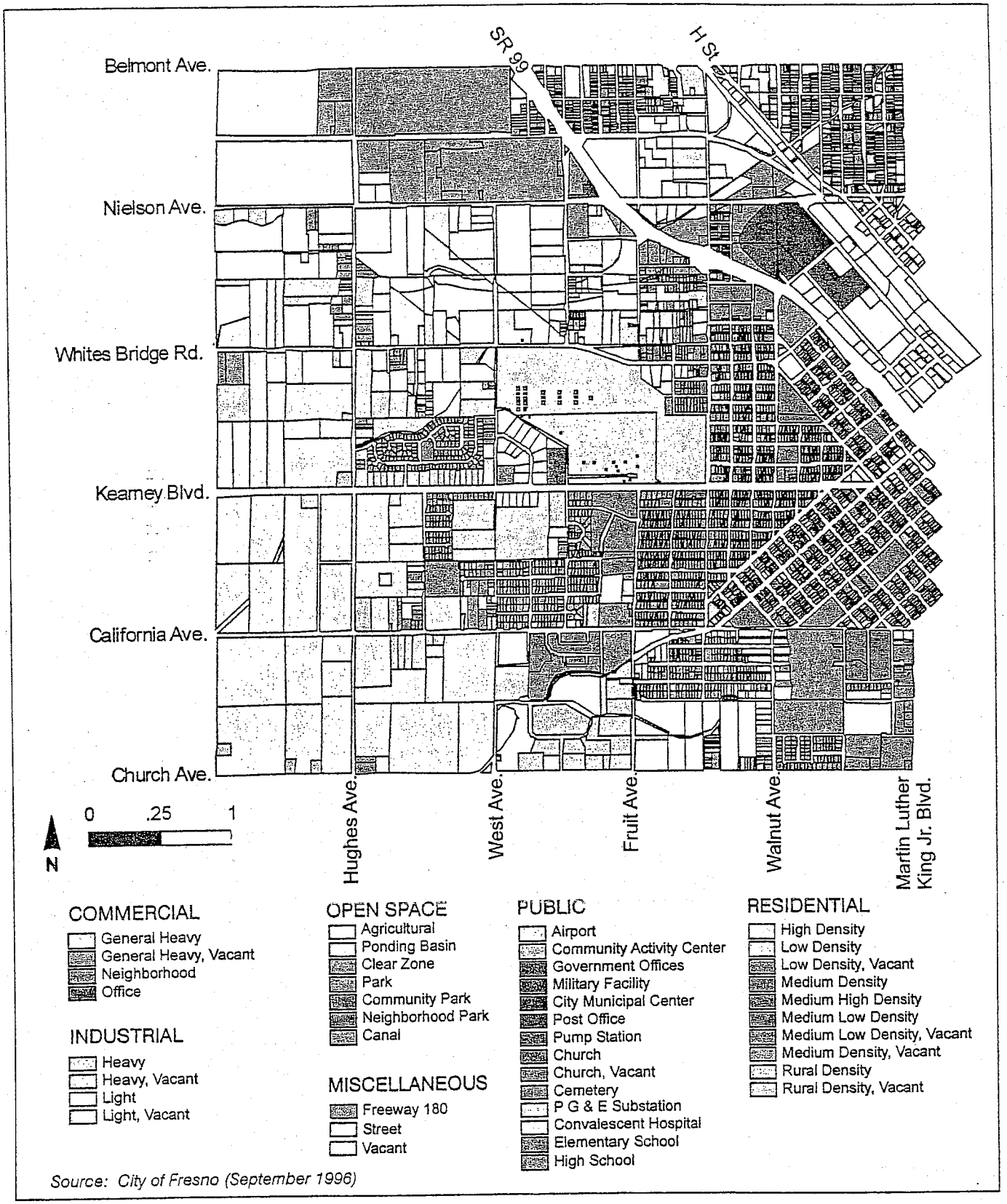
1.0 TOPOGRAPHIC, SOIL, GEOLOGIC CONSIDERATIONS

The Project would have no significant environmental effect related to this category.

2.0 AIR QUALITY

ENVIRONMENTAL ISSUES

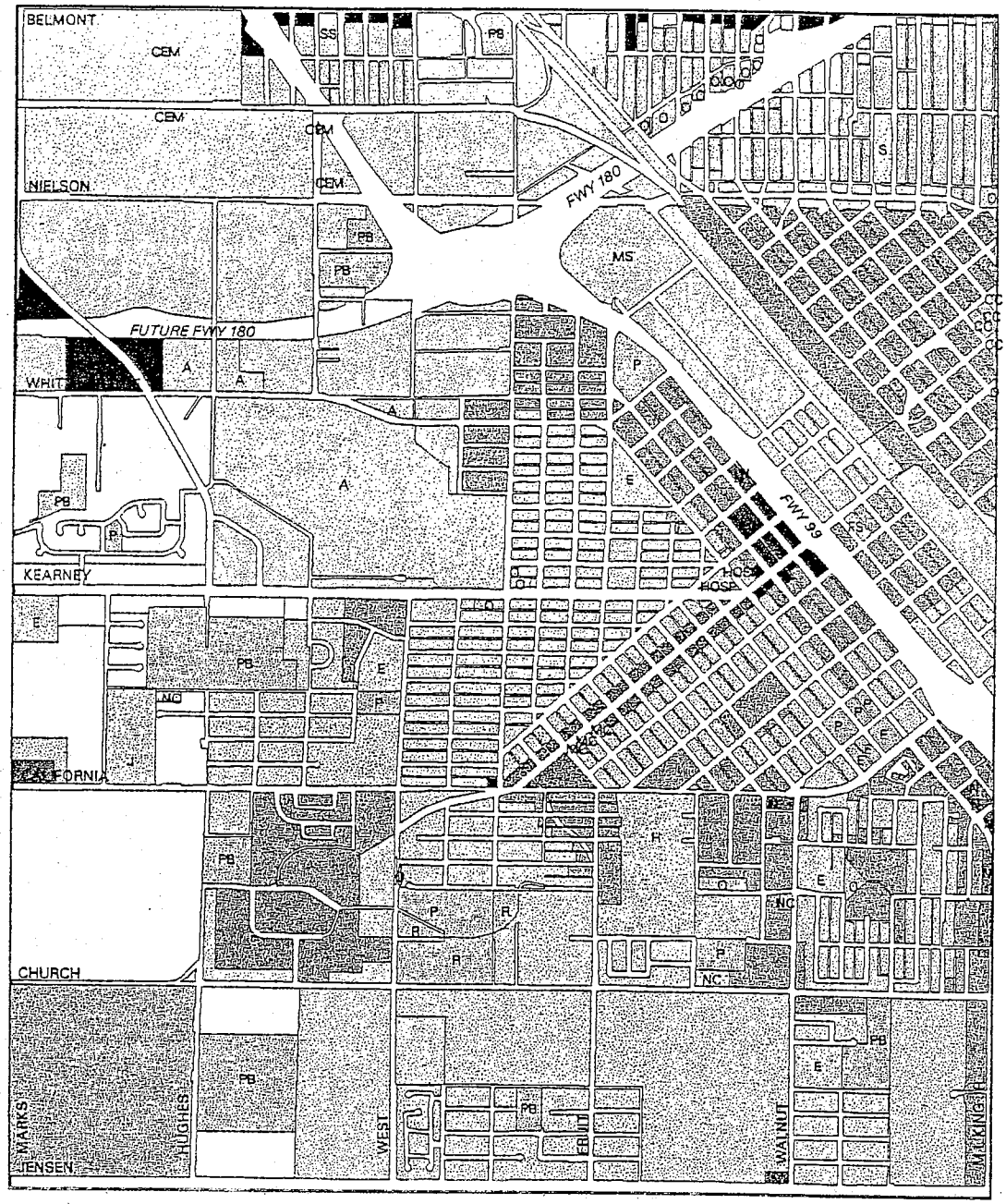
This section describes the Project's impact on local and regional air quality including: the identification of air pollutant standards, current air quality conditions, air quality impacts and associated mitigation measures. Air quality is described in relation to the ambient air quality standards for ozone and particulate matter. In addition, an analysis of carbon monoxide (CO) pollutant impacts along a representative number of street and road segments adjacent to the Project has also been developed. It should be noted that the Fresno City Council adopted a Statement of Overriding Considerations as noted in the *Final Program EIR 10125 for the Merged Redevelopment Project II: Southwest Fresno GNRA, Fruit/Church Redevelopment Project Area,* dated October 1998. The Project Area Boundary for EIR 10125 includes Chandler Airport, therefore the EIR and its findings are incorporated in this Environmental Assessment by reference.



Source: City of Fresno (September 1996)

EXHIBIT 2

Existing Land Use
Fresno-Chandler Downtown Airport *Page 8*



COMMERCIAL
- Office
- Neighborhood
- Community
- Mixed Use Level 1
- Mixed Use Level 2
- Business Park
- General Heavy

INDUSTRIAL
- Light
- Heavy
- Commercial / Industrial (central area)

OPEN SPACE
- O Open Space
- R Recreational
- PB Ponding Basin
- P Park
- N Neighborhood Park
- C Community Park

PUBLIC
- A Airport
- CEM Cemetery
- CC Civic Center (central area)
- FS Fire Station
- HOSP Hospital
- MC Medical Center
- MS Municipal Service
- NC Neighborhood Center
- SS Special School
- E Elementary School
- J Junior High School
- H High School
- S School (central area)

RESIDENTIAL
- Low Density
- Medium Low Density
- Medium Density
- Medium High Density
- Residential (central area)

NORTH

0 .25 .5
Scale in Miles

Source: City of Fresno Adopted Community Plans

EXHIBIT 3

Planned Land Use
Fresno-Chandler Downtown Airport

EXISTING ENVIRONMENTAL SETTING

Referencing Exhibit 4, the Project lies within the northern portion of the San Joaquin Valley Air Basin (SJVAB) in the City of Fresno which is located in Fresno County. In addition to Fresno County, the SJVAB includes Kern, Kings, Tulare, Madera, Merced, Stanislaus, and San Joaquin Counties. The responsible agency for monitoring and regulating air emissions in the SJVAB is the San Joaquin Valley Unified Air Pollution Control District (District).

Fresno County is surrounded by the Sierra Nevada Mountain Range to the east and the Coastal Range toward the west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems.

Climate

Many variables affect air quality such as pollutant emissions, rate and amount in conjunction with weather conditions. Wind speed and direction, air temperature and local topography all directly affect the air quality of the local area. The climate of the SJVAB is influenced by the varying terrain unique to the counties included in the SJVAB.

The Project is located on the San Joaquin Valley floor in the southwest portion of the City of Fresno. Hot dry summers and cool moist winters comprise the typical "Mediterranean" climate of this portion of Fresno County.

Air movement (vertical or horizontal) is an intricate factor for dispersion of air pollutants. The movement of air allows pollutants to become dispersed and diluted. If the air remains stagnate, pollutants become concentrated to potentially unhealthy levels. Certain weather conditions, particularly temperature inversions, may also intensify pollution levels in the area. With very light average windspeeds, the atmosphere in the Fresno area has limited capacity to disperse air contaminants horizontally. Normally, air temperature decreases with increasing elevation. In this situation, the warm air near the ground rises, carrying pollutants upward and dispersing them at higher altitudes. During the winter months, the Project area experiences inactive periods of air movement creating inversions, resulting in less dispersal of pollutants from the surface.

Other types of stagnation are surface-based inversion, in which the lower layer of the atmosphere also resists any tendency to mix, trapping pollutants near the ground. A radiant inversion, which is a surface-based inversion (up to 500 feet in depth), is more pronounced during the winter on clear, cold nights. During the night, the land radiates heat, causing the stable air layer to form near the surface. Mixing to high altitudes is very limited unless there is a strong wind blowing. The air near the ground continues to cool, but the air just above it remains warm and shallow but strong radiation inversion is created before sunrise. This type of inversion is strongest in the mountains and in the Sacramento and San Joaquin Valleys.

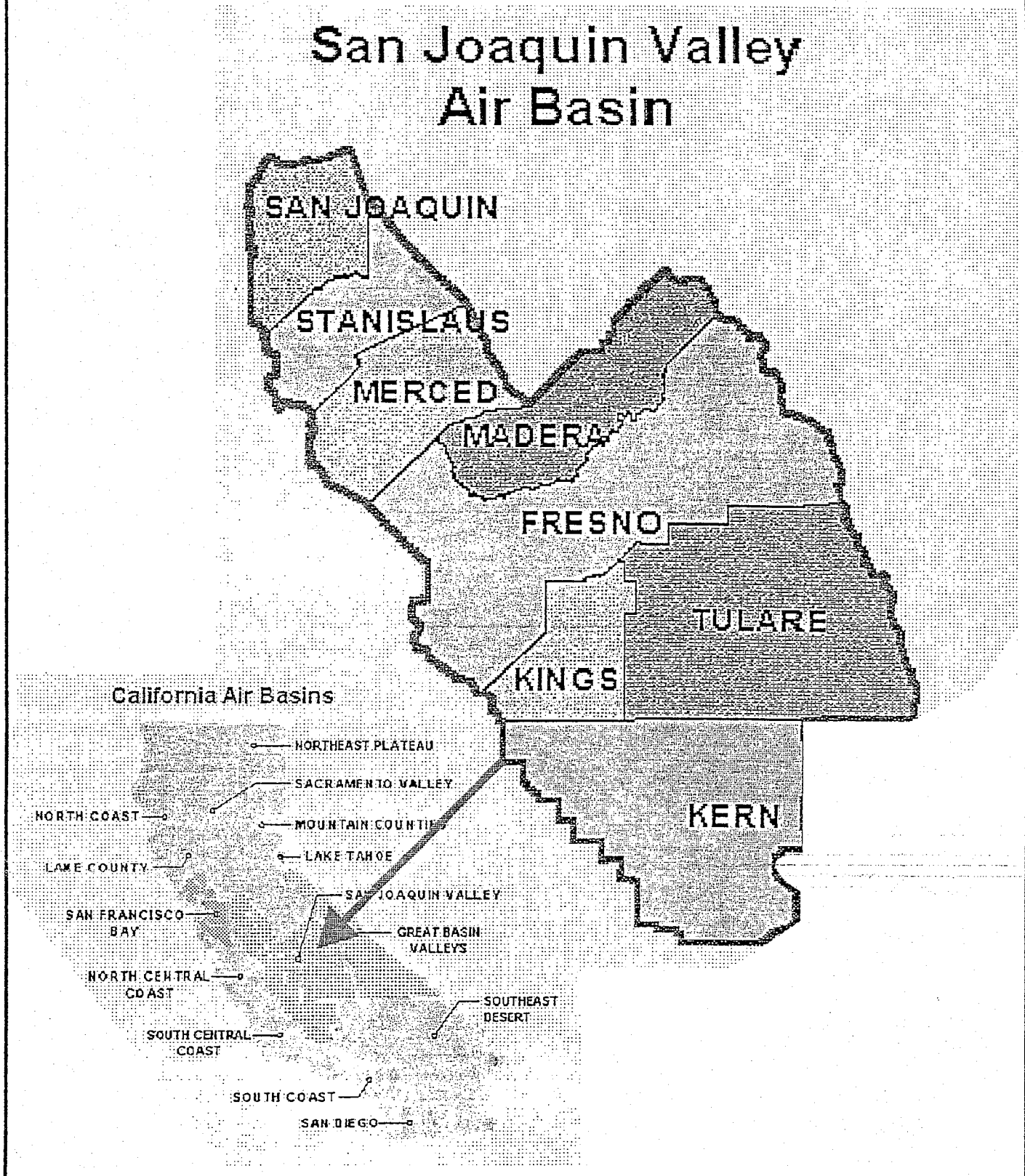


Exhibit 4	Fresno - Chandler Air Quality Impact Assessment	VRPA TECHNOLOGIES

The area is subjected to mainly westerly winds, although terrain effects can distort this general flow substantially. Wind direction is typically up-slope during the daytime and downslope at night. During the fall months strong easterly winds, known as "Mono Winds," occur for short periods.

Criteria Air Pollutants

Federal Standards

As required by the Federal Clean Air Act (FCAA), the U.S. Environmental Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for the original six "criteria" air pollutants: ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended particulate matter (PM_{10}), and lead (Pb). Standards for these pollutants are listed in Table 1. These standards represent the levels of air quality necessary, with an adequate margin of safety, to protect the public health and welfare. In addition to the PM_{10} standard, the EPA has recently implemented an additional standard for suspended particulate matter less than 2.5 microns ($PM_{2.5}$). The FCAA required States to classify basins (or portions thereof) as either "attainment" or "nonattainment" with respect to the criteria air pollutants, and to prepare air quality plans containing emission reduction strategies for those areas designated as "nonattainment."

State Standards

The State of California has established its own ambient standards for the criteria pollutants, which are also identified in Table 1. These standards are referred to as State Ambient Air Quality Standards (SAAQS), and are equal to or more stringent than their NAAQS counterparts. SAAQS have also been established for certain pollutants not covered by the NAAQS, such as hydrogen sulfide and vinyl chloride. In 1988, California passed the California Clean Air Act (CCAA) which, like its federal counterpart, called for designations of areas as attainment or nonattainment (but in reference to SAAQS rather than NAAQS). In addition, a region can be designated nonattainment transitional or unclassified. The transitional designation recognizes a region's improving air quality, but still maintains some regulatory restrictions and obligations. The unclassified designation is given for a region where data is absent or too limited for designation.

According to the information provided below, Fresno County has been designated by the state as non-attainment for O3 and PM_{10}. The County is considered in maintenance for CO which means that it has been found in attainment for CO but will be monitored to insure that CO levels remain below State and fedeal standards. Finally, Fresno County is designated attainment for all other criteria pollutants.

TABLE 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method
Ozone	1 Hour	0.09ppm (180 ug/m3)	Ultraviolet Photometry	0.12 ppm (235 ug/m3)	Same as Primary Std.	Ethylene Chemiluminescence
Carbon Monoxide	8 Hour	9.0 ppm	Non-dispersive infrared Spectroscopy (NDIR)	9.0 ppm	—	Non-dispersive infrared Spectroscopy (NDIR)
	1 Hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
Nitrogen Dioxide	Annual Average	—	Gas Phase Chemiluminescence	0.053 ppm (100 ug/m3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 ug/m3)		—		
Sulfur Dioxide	Annual Average	—	Ultraviolet Fluorescence	80 ug/m3 (0.03 ppm)	—	Pararosaniline
	24 Hour	0.05 ppm[8]		365 ug/m3 (0.14 ppm)	—	
	3 Hour	—		—	1300 ug/m3 (0.5 ppm)	
	1 Hour	0.25 ppm (655 ug/m3)		—	—	
Suspended Particulate Matter (PM10)	Annual Geometric Mean	30 ug/m3	Size Selective Inlet High Volume Sampler and Gravimetric Analysis	—	—	Inertial Separation and Gravimetric Analysis
	24 Hour	50 ug/m3		150 ug/m3	Same as Primary Standards	
	Annual Arithmetic Mean	—		50 ug/m3		
Sulfates	24 Hour	25 ug/m3	Turbidimetric Barium Sulfate	—	—	—
Lead	30 Day Average	1.5 ug/m3	Atomic Absorption	—	—	Atomic Absorption
	Calendar Quarter	—		1.5 ug/m3	Same as Primary Standard	
Hydrogen Sulfide	1 Hour	0.03 ppm (42 ug/m3)	Cadmium Hydroxide Stractan	—	—	—
Vinyl Chloride chloroethane	24 Hour	0.010 ppm (26 ug/m3)	Tedlar Bag Collection, Gas Chromatography	—	—	—
Visibility Reducing Particles	8 Hour (10 am - 6 pm PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particulates when the relative humidity is less than 70 percent. Measurement in accordance with ARB method V.		—	—	—

1. *California standards for ozone, carbon monoxide, sulfur dioxide (1 hour), nitrogen dioxide, suspended particulate matter - PMIO and visibility-reducing particulate, are values that are not to be exceeded. The sulfur dioxide (24-hour), sulfates, lead, hydrogen sulfide and vinyl chloride standards are not to be equaled or exceeded.*
2. *National standards, other than ozone and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The ozone standard 's attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.*
3. *Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 C and a reference pressure of 760 mm of mercury. All measurements of air quality are to be corrected to a reference temperature of 25 C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.*
4. *Any equivalent procedure which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.*
5. *National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the Environmental Protection Agency.*
6. *National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the implementation plan is approved by the EPA.*
7. *Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.*
8. *At locations where the state standards for ozone and/or total suspended particulate matter are violated. National standards apply elsewhere.*
9. *This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a ten-mile nominal visual range when relative humidity is less than 70 percent.*

Ozone Emissions

The most severe air quality problem in the SJVAB is the high level of ozone. Ozone can cause eye irritation and impair respiratory functions. Accumulations of ozone depend heavily on weather patterns and thus vary substantially from year to year. Ozone is produced in the atmosphere through photochemical reactions involving reactive organic compounds (ROG) and nitrogen oxides (NO_X). Numerous small sources throughout the region are responsible for most of the ROG and NO_X emissions in the Basin. [The ozone State standard for 1 hour was exceeded forty-five (45) days in 1996 at the Fresno Drummond Street Monitoring Site.]

Suspended PM_{10} Emissions

PM_{10} refers to particulate matter less than 10 microns in diameter - those that can be inhaled and cause health effects. Common sources of particulates include demolition, construction activity, agricultural operations, traffic and other localized sources such as from fireplaces. Very small particulates of certain substances can cause direct lung damage, or can contain absorbed gases that may be harmful when inhaled. Particulates can also damage materials and reduce visibility. The highest four Daily State PM_{10} standards were exceeded eighteen (18) times in 1997 at the Fresno - Drummond Street monitoring station.

Carbon Monoxide (CO)

Because CO is emitted primarily by motor vehicles and is non-reactive, ambient CO concentrations normally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are also influenced by meteorological factors such as wind speed and atmospheric mixing. High levels of CO can impair the transport of oxygen in the bloodstream and thereby aggravate cardiovascular disease and cause fatigue, headaches, and dizziness. CO standards in the Fresno-Clovis Metropolitan Area are projected to be in attainment of federal and State standards by the California Air Resources Board (CARB). The maximum eight-hour high was 4.09 in 1997 at the Drummond Street monitoring station which is below State and federal standards.

Nitrogen Dioxide (NO_2)

The major sources of nitrogen dioxide (NO_2), essential to the formation of photochemical smog, are vehicular, residential, and industrial fuel combustion. NO_2 is the "whiskey brown" colored gas evident during periods of heavy air pollution. NO_2 increases respiratory disease and irritation and may reduce resistance to certain infections. The standards for NO_2 are being met in the SJVAB and the District does not expect that the standards will be exceeded in the near future.

Sulfur Dioxide (SO_2)

The major source of sulfur dioxide (SO_2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain. SO_2 can irritate the lungs, damage vegetation and materials and reduce visibility. The standards for SO_2 are being met in the SJVAB and the District does not expect that the standards will be exceeded in the near future.

Lead (Pb)

Gasoline-powered automobile engines are a major source of airborne lead, although the use of leaded fuel is being reduced. Lead can cause blood effects such as anemia and the inhibition of enzymes involved in blood synthesis. Lead may also affect the central nervous and reproductive systems. Ambient lead levels have dropped dramatically as the percentage of motor vehicles using unleaded gasoline continues to increase. The standards for lead are being met in the SJVAB and the District does not expect that the standards will be exceeded in the future.

District Requirements

The CCAA also requires non-attainment areas (for O3 and CO) to develop air quality plans that contain strategies for achieving attainment. For this purpose, Air Quality Attainment Plans (AQAP) were developed for the regions of nonattainment by the Districts with encompassing jurisdiction. In Fresno County, the District is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources. The District also has responsibility for

monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under State law.

The District was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP) in response to the requirements of the State CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, 1988 State air quality standards are met.

The AQAP for the San Joaquin Valley Air Basin discusses policy goals for achieving air quality standards, identifies several Transportation Control Measures (TCMs) as "reasonably available" in the SJVAB, and proposes an indirect source program consisting of enhanced district CEQA participation, air quality elements for general plans, and indirect source review.

Applicable federal and State standards for each regulated pollution category compared to monitoring data for the closest monitoring site in Fresno on Drummond Street are provided in Table 2. The applicable standard for each pollution category, for environmental documentation purposes (i.e., identification of significant impacts), is whichever is the more stringent of the federal and State standards. Based upon information provided in Table 2, the City of Fresno is nonattainment for ozone and PM_{10}.

TABLE 2
FEDERAL AND STATE STANDARDS FOR NONATTAINMENT POLLUTANTS IN THE CITY OF FRESNO

Pollutant	Averaging Time	Applicable Standard	City of Fresno - Drummond Street Monitoring Station
Ozone	Max. Hourly High	0.09 ppm State 0.12 ppm Federal	.154 ppm
Carbon Monoxide (CO)*	Max. Eight-hour High Max. One-hour High	9-ppm State/Federal 20 ppm State 35 ppm Federal	4.09 5.4
Particulates (PM_{10})	Geometric Mean 24 Hour High	30 g/m^3 State 50 g/m^3 State	41.53g/m^3

Source: California Air Resources Board, 1997, Air Quality Data Summary
* CO monitoring site is in Fresno on Drummond Avenue.

For regional pollutants such as ozone and PM_{10}, the impact of new development cannot be predicted in terms of concentrations, but is addressed in terms of changes in the regional burden of emissions. The District has established interim thresholds for certain pollutants (reference Table 3). This assessment addresses two types of impact analysis: (1) regional ozone and PM_{10} impacts; and (2) localized mobile source impacts (resulting from CO) emissions and construction impacts (resulting from PM_{10} emissions).

TABLE 3
SJVUAPCD INTERIM
EMISSION THRESHOLDS

Non-Attainment Pollutant	Minimum Thresholds Tons/Year
NO_X	10
ROG	10
PM_{10}	15

Source: SJVUAPCD

For localized pollutants, such as CO, an increase in concentrations that would result in a predicted violation of the most stringent State or federal standard [20.0 parts per million (PPM) for 1-hour or 9.0 PPM for 8 hours] is considered to represent a significant impact. This assessment provides for three types of Project area pollutant impact analysis: (1) regional mobile and area source impacts, (2) street and highway traffic impacts; and (3) construction impacts.

Standards of Significance

According to the California Environmental Quality Act (CEQA), a project will normally have a significant adverse impact on air quality if it will "violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations."

For regional pollutants such as ozone, PM_{10}, sulfur dioxide or nitrogen dioxide, the impact of new development cannot be predicted in terms of concentrations, but is addressed in terms of changes in the regional burden of emissions. For non-attainment pollutants (ozone precursors or PM_{10}), any net increase in regional emissions is considered significant.

For localized pollutants, such as carbon monoxide, an increase in concentrations that would result in a predicted violation of the most stringent State or federal standard (20.0 PPM for 1-hour or 9.0 PPM for 8-hours) is considered to represent a significant impact. This assessment provides for two types of localized area pollutant impact analysis; street and highway improvements and traffic volumes and construction impacts.

For purposes of this environmental assessment, an impact is considered significant if one or more of the following conditions occur from implementation of the Project:

- exceeds regional air quality emission standards;
- exceeds local air quality emission standards;
- results in significant construction related air quality impacts; and/or
- results in the creation of objectionable odors.

METHODS OF ANALYSIS

The Project is evaluated in terms of short-term and long-term impacts. Short-term impacts are directly related to site clearing and construction activities while long-term impacts (year 2020) relate to the Project operation over time. Construction activities would produce an increase in PM_{10} locally in the short term while automobiles generated by the Project would produce long term increases in ozone precursor emissions.

2.1 Substantial Indirect Source of Pollution - Development and Operational Impacts (Long-term)

The analysis process included the use of programs or data sources (URBEMIS/EMFAC) contained in Air Quality Analysis Tools (AQAT) software. The URBEMIS5 air quality model was used to calculate Project emissions. This model uses vehicle trip generation based upon land use types, travel speeds, season, climate and estimated trip length. The model outputs are summarized below and provided in the Technical Appendices.

The assessment has been developed to identify the amount of pollutant and fuel increases from mobile and area sources associated with the Project Alternative for the year 2020 (reference Table 4). It should be noted that the Project will produce stationary source impacts. The long-term emissions are quantified in terms of "regional" impacts. These analyses provide for estimated emissions (CO, ozone, and PM_{10}) resulting from future conditions with the Project.

Year 2020 With Project Impacts

According to analysis results, the Project will result in an exceedence of the maximum ROG and NO_X Emission Thresholds. The Project Alternative represents the "worst-case" scenario with respect to generated non-attainment mobile source pollutants. The estimated Project related air emissions are shown in Table 4. The Project may exacerbate local air quality conflicts, however, the impact is not felt to be significant.

No-Project Impacts

The No-Project Alternative assumes that currently approved planned land uses will remain the same (existing Runway 12L-30R and a vacant 40 acre lot located north of West Amador Street). Based

upon results of the analyses provided in Table 4 for the Project Alternative, the No-Project Alternative would not result in additional mobile or area source emissions considering trip generation differences between existing and proposed uses.

TABLE 4*[1]
2020 REGIONAL AND AREA SOURCE EMISSIONS*[2]

Regional Mobile Source Emissions (Lbs. per day)				
Land Use	SQFT of Construction/Lot Size	ROG	NO_X	PM_{10}
Airport Operations/Light Industrial/Business Center	70 Acres			
Total Regional Mobile Source Emissions		**233.82**	**426.26**	**16.80**
Area Source Operations Emissions (Lbs. per day)				
Land Use	Units/SQFT.	ROG	NO_X	PM_{10}
Airport Operations/Light Industrial/Business Center	70 Acres			
Total Area Source Emissions		**.86**	**10.17**	**0.02**
Total Emissions (Lbs. per day)				
Land Use	Units/SQFT.	ROG	NO_X	PM_{10}
Airport Operations/Light Industrial/Business Center	70 Acres			
PROJECT		**234.68**	**436.43**	**16.82**
Total Emissions (tons per year)				
Land Use	Units/SQFT.	ROG	NO_X	PM_{10}
Airport Operations/Light Industrial/Business Center	70 Acres			
PROJECT		**50.68**	**83.51**	**3.07**

Key: bold = exceedence

*[1] Estimates calculated by VRPA Technologies, January 1999

Mitigation/Implementation/Verification - Development and Operations

The following applicable Mitigation Measures are designed to minimize the long-term air quality impacts of the Project.

- The use of energy efficient street lighting and parking lot lighting shall be considered to reduce emissions at the power plant.
- Landscaping shall include water efficient plant species and irrigation to reduce water consumption and provide passive solar benefits.
- Design guidelines for Project developments shall consider innovative solutions to encourage transit ridership and other alternative transportation modes.

- Encourage additional wall and attic insulation beyond existing building code (Title 24) requirements for all commercial/industrial developments.

- Require that space and water heaters comply with District Stationary Source Rules and Uniform Mechanical Code requirements, and encourage the installation of energy efficient lighting beyond Title 24 requirements for all commercial/industrial developments.

- Use of HVAC equipment with a SEER of 12 or greater.

- Conversion of one or more public service vehicles from gasoline or diesel to compressed natural gas (CNG), or electric powered.

- Use of alternative fuel vehicles shall be encouraged in vehicle fleets and new facilities shall be designed to set aside space for refueling or electrical recharging of vehicles.

- The City should promote the use of signal synchronization, one-way streets, computerized traffic controls, removal of unnecessary signals, and other engineering techniques to decrease idling time and maximize the speed of traffic on congested surface streets.

- Implementation of planned street and highway, transit, and bikeway improvements (as may be specified in the Traffic Impact Assessment) adjacent to the Project site necessary to relieve congestion and reduce idlings.

- Ingress and egress points in new development shall be designed to minimize idling vehicle emissions.

The mitigation measures described above will reduce Project-related daily emissions from mobile and stationary sources to acceptable levels. The generation of additional ROG and NOx (ozone precursors), and particulate matter (which are non-attainment pollutants in the Air Basin), are however, considered significant in the cumulative scenario. Cumulative development within the City of Fresno would significantly contribute to levels of non-attainment pollutants regardless of the Project's minor individual contribution. Cumulative impacts are addressed in the following section.

Cumulative Development Impacts

Project generated emissions, together with emissions from future (Year 2020) cumulative development, would contribute to levels of non-attainment pollutants within the County. This impact is significant and unavoidable.

Build out of the Project, by incrementally adding to regional air pollution, would contribute to and exacerbate Fresno County's current noncompliance with State and Federal ambient air quality standards for Ozone and PM_{10}. The Project may exacerbate local air quality conflicts, however, the impact is not felt to be significant. As previously noted, the Fresno City Council adopted a Statement of Overriding Considerations as noted in the *Final Program EIR 10125 for the Merged Redevelopment Project II: Southwest Fresno GNRA, Fruit/Church Redevelopment Project Area,* dated October 1998. The Project Area Boundary for EIR 10125 includes Chandler Airport, therefore the EIR and its findings are incorporated in this Environmental Assessment by reference.

Mitigation/Implementation/Verification - Cumulative Development

- The City of Fresno shall incorporate, at the time of construction, the following provisions intended to promote energy efficiency and reduce air quality impacts:

  - future construction should use energy efficient lighting and process systems beyond Title 24 requirements where practical (e.g., water heating, furnaces, boiler units, etc.);
  - the Project shall utilize water heating featuring low-NOx water heating burners if electric water heating is not used; and
  - future construction should use energy efficient, automated controls for air conditioning beyond Title 24 requirements where practical.

Even though the Project would contribute incrementally to regional, cumulative non-attainment emissions, emissions generated by the Project itself are not considered significant. The Project may exacerbate local air quality conflicts, however, the impact is not felt to be significant.

2.2 Direct On-Site Pollution Generation - Localized (Circulation and Construction) Air Quality Impacts of the Project

Project Traffic Impacts on Localized Air Quality

Based on the Cumulative with Project Transportation Analysis for the Project prepared by VRPA Technologies, the Project is expected to generate automobile traffic that will affect air quality along adjacent streets and highways. Adjacent to such roadways, the measurable pollutant most significant is CO.

Federal regulations require that new roadway improvement projects that may be implemented using federal funds, must not exceed State or federal standard CO concentrations of 20 parts per million (PPM) for 1 hour (the federal maximum standard of 35 PPM is far less stringent than the State's maximum standard of 20 PPM). Further, emissions generated from development projects must also not exceed the minimum 8 hour standard of 9 PPM.

To analyze the Project's "worst case" CO concentrations along such roadways, the analysis methodology considered the highest second annual maximum CO concentration reported in 1995, using approximately 5.4 PPM as an estimate of the background concentration for the 1 hour standard and 4.8 PPM as an estimate of the background concentration for the 8-hour standard (source: CARB annual publications). Seventy-five degrees Fahrenheit was used as the mean summer temperature in Fresno. The emissions rates used in this analysis were obtained from the EMFAC7 model contained in AQAT.

To assess the cumulative impacts of increased traffic generated by other planned developments, an analysis of future year 2020 peak hour volumes was developed. Six (6) representative roadway segments and fifteen (15) receptor sites were chosen to conduct the Project and cumulative traffic

impact analysis (reference Table 5). The CALINE4 model was run using the "worst case" scenario. Then the maximum CO concentration generated by the Project was added to the background CO concentration of approximately 5.4 PPM for the 1 hour standard and 4.8 PPM for the 8-hour standard.

TABLE 5
LOCAL ROADWAY AIR QUALITY SEGMENT ANALYSIS AM/PM
Year 2020 With Project (1-Hour and 8-Hour CO Concentration)

Receptors		Air Quality Standards				Air Quality Levels for Each Receptor		Are Standards Exceeded (Yes/No)?	
		Federal		State					
#	DESCRIPTION	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr	1 hr	8 hr
BACKGROUND LEVELS (ppm)		35.0	9.0	20.0	9.0	5.4	4.8	NO	NO
1	Southwest corner of Kearney Blvd. and West Ave.	35.0	9.0	20.0	9.0	16.9	11.3	NO	YES
2	Northwest corner of Kearney Blvd. and West Ave.	35.0	9.0	20.0	9.0	12.6	7.0	NO	NO
3	Southwest corner of Whites Bridge Rd. and West Ave.	35.0	9.0	20.0	9.0	11.1	5.5	NO	NO
4	Northeast corner of Kearney Blvd. and West Ave.	35.0	9.0	20.0	9.0	11.3	6.6	NO	NO
5	Southwest corner of Nielsen Ave and Hughes Ave.	35.0	9.0	20.0	9.0	12.4	5.8	NO	NO
6	Southeast corner of Nielsen Ave and West Ave.	35.0	9.0	20.0	9.0	10.8	5.0	NO	NO
7	Northeast corner of Whites Bridge Rd. and West Ave.	35.0	9.0	20.0	9.0	11.3	5.7	NO	NO
8	Southwest corner of Whites Bridge Rd. and Thorne Ave.	35.0	9.0	20.0	9.0	11.8	6.2	NO	NO
9	Northwest corner of Whites Bridge Rd. and Thorne Ave.	35.0	9.0	20.0	9.0	11.2	5.6	NO	NO
10	Northeast corner of Whites Bridge Rd. and Thorne Ave.	35.0	9.0	20.0	9.0	11.3	5.6	NO	NO
11	Southeast corner of Whites Bridge Rd. and Thorne Ave.	35.0	9.0	20.0	9.0	11.1	5.6	NO	NO
12	Northeast corner of Kearney Blvd. and Thorne Ave.	35.0	9.0	20.0	9.0	11.3	5.7	NO	NO
13	Southeast corner of Kearney Blvd. and Thorne Ave.	35.0	9.0	20.0	9.0	11.2	5.7	NO	NO
14	Southwest corner of Kearney Blvd. and Thorne Ave.	35.0	9.0	20.0	9.0	11.2	5.6	NO	NO
15	Southeast corner of Kearney Blvd. and West Ave.	35.0	9.0	20.0	9.0	11.1	5.6	NO	NO
AVERAGES/SUMMARY		35.0	9.0	20.0	9.0	11.8	6.2	NO	NO

Source: VRPA Technologies, January 1999

Results of the year 2020 CO concentration analysis are contained in Table 5. Based upon the results, CO concentration levels will exceed air quality standards with the Project at one receptor site analyzed for an eight-hour period. However, the average CO concentration levels at all fifteen sites are within the State's air quality standards. Therefore, mitigation is not warranted and the impacts are considered insignificant.

Construction Impacts

PM_{10} emissions from construction activity have been quantified based on the methodology documented in the SCAQMD CEQA Handbook, at the suggestion of the District (reference Table 6). The District requires an analysis of PM_{10} impacts resulting from construction of a proposed project and cumulative projects.

TABLE 6
ESTIMATION OF TOTAL PM_{10} CONSTRUCTION EMISSIONS WITH PROJECT *

Project	Square Footage of Construction/Lot Size	Construction Days	PM_{10} Lbs./Day	PM_{10} Tons/Year
Airport operations/light industrial/business center	70 acres	250	710.88	.91
Total	70 acres	250	710.88	.91

Source: Methodology applied by URBEMIS 7G, version 3.1. Construction impacts will occur as the Project area is developed. Construction of on-site light industrial and business center development will each bring about a period of construction activity and associated air quality impacts.
* Emissions calculated by VRPA Technologies, January 1999.

Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earthmoving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture.

Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulates. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the Project area and may require frequent washing during the construction period. Further, asphalt paving materials used during construction will present temporary, minor sources of hydrocarbons that are precursors of ozone. Application of the SCAQMD methodology indicates that during construction of the Project, the interim threshold of significance for PM_{10} (15 tons per year) established by the District will be exceeded. However, it is not expected that the entire Project will be constructed at once. Likely, the Project will be constructed over a

number of years; therefore construction impacts related to individual Project developments may not exceed the minimum threshold.

Construction activities resulting from the Project would increase dust and particulate matter pollutants, resulting in short-term air quality impacts. These impacts however, are not considered significant since they are "short-term" impacts.

Project Site Grading Impacts

Construction related air quality impacts associated with the Project are generally attributable to dust generated by grading and wind erosion, exhaust emissions associated with heavy-duty construction equipment, and worker-related vehicle trips. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities represent major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture.

Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulates. Dust-fall can be a nuisance to neighboring properties or previously-completed developments surrounding or within the Project area. Further, asphalt paving materials used during construction would present temporary, minor sources of hydrocarbons that are precursors of ozone.

Increases in construction-related activities would create dust during building stages of the Project, adding to ambient PM_{10} and $PM_{2.5}$ concentrations. For infrastructure improvements both on and off site, dust emissions would be generated commensurate with the number of acres being disturbed. Diesel powered earth moving equipment working simultaneously on an average day would also create short-term emissions which could be potentially significant.

Vegetation Disposal Impacts

In the areas subject to grading, vegetation and trees may be removed with the possibility of being disposed of and burned on site. Open burning of trees and brush cleared during grading activities would create localized air quality impacts, especially when inversions are present. This would produce high levels of PM and CO potentially affecting nearby residents. Limiting the amount of open burning would eliminate these additional impacts. Onsite chipping and shredding of vegetation waste can reduce this potential source of additional particulate matter impacts.

Mitigation/Implementation/Verification - Localized Construction

- Grading and improvement plans shall include a dust prevention strategy incorporating Best Management Practices (BMPs) in order to reduce dust emissions. The SJVUAPCD's Regulation VIII - Fugitive Dust/PM_{10} Synopsis should be applied. The purpose of Regulation

VIII is to reduce the amount of PM injected into the ambient air from man-made sources. In addition, Rule No 8020-Dust Control Requirements for Construction, Demolition, Excavation, and Extraction Activities shall be implemented.

- As a condition of grading permit issuance, open burning of cleared vegetation shall be prohibited. Cleared vegetation shall be treated by legal means other than open burning, such as chipping, shredding or grinding. Such methods shall be noted on the improvement plans.

Implementation of the above mitigation measures would reduce the Project's short-term air pollution impacts resulting from construction activities to a less than significant level.

3.0 WATER

3.1 Sufficiency of Ground Water

The City of Fresno Public Utilities Department, Water Division currently provides water to the Airport. The supply and interconnected system of water mains is sufficient to provide for water usage within the area, including supply sufficient to meet potential fire flow demands. The source of water is from the underground aquifer. The City is managing the existing groundwater resources including routine testing of groundwater to identify contaminants, constructing wellhead treatment facilities when necessary to remove contaminants from the groundwater, and constructing groundwater recharge facilities to replenish the groundwater supply.

Additional interconnected water mains will need to be extended along with other infrastructure to serve development of the approximately 70 acres proposed for revenue generating development. Such extensions will be provided to meet fire flow requirements of anticipated development.

The improvements anticipated by the Project will not degrade existing water supplies, either in terms of quantity or quality.

Mitigation/Implementation/Verification

- Extension or enhancement of transmission grid main water distribution system and remedial improvements to the water well pump station supply network should continue in accordance with the adopted policies, standards, and water system improvement programs under the direction of the City of Fresno's Public Utilities Department, Water Division.

Implementation of the above mitigation measure would insure that impacts resulting from new development will be reduced to a less than significant level.

3.4 Pollution of Surface or Groundwater Supplies

Pollution of surface or groundwater supplies may occur as a result of the Project. Fuel, fire retardants, and other potentially hazardous wastes washed off of aircraft, runways, and parking

surfaces could be introduced into the storm water drainage system, other surface waters, or the groundwater system. In addition, new industrial development could also potentially cause increased pollution of the surface or groundwater supplies.

Mitigation/Implementation/Verification

- The City should implement improvements to the on-site drainage system identified in the Draft Fresno-Chandler Downtown Airport Master Plan Report. Such improvements would reduce the flow of contaminants into the storm drain system and groundwater supply.

- Provide for the construction of a new aircraft wash rack. The rack is identified in the Draft Master Plan Report as a "near-term" improvement project. Placement of the new rack near the fuel island should be considered so that the drainage and filtration system could be combined with the fuel island improvements to protect against spills.

Implementation of the above mitigation measures would insure that impacts resulting from new development will be reduced to a less than significant level.

4. PLANT LIFE

This Project will have no significant adverse effect on endangered plant life or agricultural production.

5. ANIMAL LIFE

This Project will have no significant adverse effect on endangered species or wildlife habitat.

6. HUMAN HEALTH

See Noise.

7. NOISE

INTRODUCTION

This Noise Impact Assessment (NIA) has been prepared for the purpose of identifying potential noise impacts that may result from the proposed Project including proposed light industrial/office park development and Airport improvements described previously.

DESCRIPTION OF THE REGION/PROJECT

Major noise sources in the area include aircraft engines and traffic along Kearney Boulevard, Whites Bridge Road, Hughes/West Avenue, and Thorne Avenue. The most significant noise sources in Fresno County are caused by automobiles and trucks, mainly because roadways are so extensive.

Noise produced near or by aircraft landing or departing from Fresno-Chandler Airport may be of local concern, but in terms of the number of square miles affected, their impacts compared to traffic noise in southwest Fresno are relatively minor.

ACOUSTICAL TERMINOLOGY

Ambient Noise Level: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7 p.m. to 10 p.m. and ten decibels to sound levels in the night before 7 a.m. and after 10 p.m.

Decibel, dB: A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micro-newtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

L_{eq}(h): The hourly value of L_{eq}.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). L_{10} equals the level exceeded 10 percent of the time.

L_n(h): The hourly value of L_n.

Noise Exposure Contours: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighing filter network. The A-weighing filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

Note: CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

METHODS OF ANALYSIS

Traffic Noise Assessment

When preparing an NIA, guidelines set by affected agencies must be followed. In analyzing noise levels, the FHWA Highway Traffic Noise Prediction methodology must be applied. Safety concerns must also be analyzed to determine the need for appropriate mitigation resulting from increased noise due to increased traffic adjacent to the Project and other evaluations such as the need for noise barriers and other noise abatement improvements. Criteria levels are given as A-weighted decibels. First, existing "baseline" traffic noise levels are established based on previously collected traffic data and using Sound32 modeling. Sound32 is the Caltrans version of FHWA's STAMINA 2.0/OPTIMA Traffic Noise Prediction Programs. Once existing levels are established, future levels, based on expected traffic growth, are calculated and compared to both the existing noise level and the Noise Abatement Criteria (reference Table 7). It should be noted that the Noise Abatement Criteria levels are not standards, but are levels at which FHWA has determined that noise is of sufficient magnitude that abatement must be considered, as referenced in the Transportation Planning Handbook. The United Stated Code of Federal Regulations Title 23 Part 772 is the noise standard mandated by federal law.

When comparing the different alternatives, the findings will determine if an impact will occur as a result of the Project. An impact will occur under either of two conditions, according to the Transportation Planning Handbook. First, a future noise level that represents a "substantial increase" over existing noise levels (defined as 10 to 15 dB by the state highway agencies), regardless of the beginning noise level, is considered an impact. Second, if the Noise Abatement Criteria are approached or exceeded abatement measures must be investigated. The Criteria are expressed in two descriptors (L_{10} and L_{eq}) for both indoor and outdoor locations and various land use types.

TABLE 7
NOISE ABATEMENT CRITERIA
[Hourly B-Weighted Sound Level-decibels (dBA)]

Activity Category	$L_{eq}(H)$	$L_{10}(h)$	Description of activity category
A	57 (exterior)	60 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	70 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	75 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	---	Undeveloped lands
E	52 (interior)	55 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: United States Code of Federal Regulations, Title 23, Part 772.

7.2 Exposure to High Noise Levels

Traffic Impacts

Existing traffic noise levels were evaluated using the FHWA Highway Traffic Noise Prediction Model. Traffic volumes collected over the past year (including truck percentages) and speeds of 50 miles per hour were entered into the model to roughly estimate noise levels at locations adjacent to the Project. No provision was made for depressed roadways, soundwalls or other factors that would affect noise levels. Potential impacts are classified as follows:

- Low - L_{dn} 60 dB or below;
- Moderate - L_{dn} 61 dB to 70 dB; and
- High - L_{dn} 71 dB or greater.

The potential for adverse noise impacts is generally moderate to high along most segments of State highways, and is generally low to moderate along most segments of county streets and highways.

The analysis contained in this section addresses potential noise impacts resulting from implementation of the proposed Project. Traffic noise along the Project has been quantitatively analyzed based on projected traffic volumes and other operational assumptions.

The previous section provides a description of the acoustical terminology applied to determine noise impacts. Unless otherwise stated, all sound levels reported are in B-weighted decibels (dB). To

assess the traffic noise impacts that the Project may have on the surrounding land uses, the first step is to determine the baseline or the existing noise condition. The second is to then compare the baseline to future level results, based on expected traffic growth and the Noise Abatement Criteria levels.

Existing Conditions Analysis

The first step toward assessing Project noise impacts is to thoroughly assess all existing noise conditions. To accomplish this task, VRPA Technologies' staff compiled recent traffic count data and existing geometric conditions from other studies recently completed in the Project area.

Several street and highway segments adjacent to the Project site were analyzed to determine noise impacts to adjacent land uses utilizing FHWA-based methodologies described previously, and include:

- Hughes Avenue between California Avenue and Nielsen Avenue;
- Whites Bridge Road between Hughes Avenue and Stanislaus;
- Kearney Boulevard between Hughes Avenue and Fresno Street; and
- Thorne Avenue between California Avenue and Nielsen Avenue.

Results of the noise analysis along the existing street and highway system in the Project area are reflected in Table 8, and are further described in the Technical Appendices.

Results of the segment analysis indicate that most segments analyzed within the Project area are currently below the Noise Abatement Criteria in the Activity Category B in the Existing Condition.

Future Conditions Without Project

Impacts in the Project area resulting from 20 years of growth and development without the Project are described in this Section. Traffic conditions were estimated to reflect logical growth in vehicle trips over the next 20 years. An annual growth factor of three percent (3%) was applied based upon information obtained from the County of Fresno. A noise impact analysis of Future Conditions Without Project was developed considering future year volumes and by applying the FHWA-based methodologies. Results are identified in Table 9 and in the Technical Appendices.

Results of the segment analysis indicate that all receivers are at or below abatement Criteria standards described in Activity Category B for Future Conditions With and Without the Project. The comparison between Future Conditions With and Without the Project indicates that the Project will not have a significant impact on noise levels as the largest difference at any receiver is 2.2 dB.

TABLE 8
NOISE IMPACTS FOR EXISTING AND
EXISTING WITH PROJECT ALTERNATIVES

Rec. No.	Location	Existing L_{eq}
1	Southwest corner of Kearney Blvd. And West Ave.	61.4
2	Northwest corner of Kearney Blvd. and West Ave.	61.4
3	Southwest corner of Whitesbridge Ave. and West Ave.	63.2
4	Northeast corner of Kearney Blvd. And West Ave.	62.1
5	Southwest corner of Nielsen Ave. and Hughes Ave.	62.9
6	Southeast corner of Nielsen Ave. and West Ave.	55.7
7	Northeast corner of Whitesbridge Ave. and West Ave.	62.9
8	Southwest corner of Whitesbridge Ave. and Thorne Ave.	62.2
9	Northwest corner of Whitesbridge Ave. and Thorne Ave.	60.5
10	Northeast corner of Whitesbridge Ave. and Thorne Ave.	60.0
11	Southeast corner of Whitesbridge Ave. and Thorne Ave.	59.8
12	Northeast corner of Kearney Blvd. And Thorne Ave.	62.0
13	Southeast corner of Kearney Blvd. And Thorne Ave.	62.4
14	Southwest corner of Kearney Blvd. And Thorne Ave.	60.9
15	Southeast corner of Kearney Blvd. And West Ave.	61.4

TABLE 9
NOISE IMPACTS FOR FUTURE AND FUTURE WITH PROJECT ALTERNATIVES

Rec. No.	Location	Future L_{eq}	Future w/ Project L_{eq}	Difference
1	Southwest corner of Kearney Blvd. And West Ave.	67.0	68.6	+1.6
2	Northwest corner of Kearney Blvd. and West Ave.	67.2	68.7	+0.9
3	Southwest corner of Whitesbridge Ave. and West Ave.	68.3	69.2	+0.9
4	Northeast corner of Kearney Blvd. And West Ave.	68.8	70.0	+1.2
5	Southwest corner of Nielsen Ave. and Hughes Ave.	69.6	70.8	+1.2
6	Southeast corner of Nielsen Ave. and West Ave.	62.1	63.3	+1.2
7	Northeast corner of Whitesbridge Ave. and West Ave.	68.9	70.4	+1.5
8	Southwest corner of Whitesbridge Ave. and Thorne Ave.	68.8	70.3	+1.5
9	Northwest corner of Whitesbridge Ave. and Thorne Ave.	62.2	64.3	+2.1
10	Northeast corner of Whitesbridge Ave. and Thorne Ave.	61.7	63.9	+2.2
11	Southeast corner of Whitesbridge Ave. and Thorne Ave.	61.4	63.4	+2.0
12	Northeast corner of Kearney Blvd. And Thorne Ave.	64.2	64.3	+0.1
13	Southeast corner of Kearney Blvd. And Thorne Ave.	64.6	64.6	0
14	Southwest corner of Kearney Blvd. And Thorne Ave.	63.0	63.0	0
15	Southeast corner of Kearney Blvd. And West Ave.	63.4	63.5	+0.1

Future Conditions With Project

Impacts on future noise conditions resulting from the Project are described in this section. In this scenario, the future year volumes were analyzed.

Noise analysis of the Future Conditions With Project Alternative was developed and results are identified in Tables 9 and 10 and in the Technical Appendices. Table 9 above compares Future Conditions with and without the Project, whereas Table 10 below compares Future Conditions With Project to Existing Conditions.

TABLE 10
FUTURE CONDITIONS WITH PROJECT AND
EXISTING CONDITIONS

Rec. No.	Location	Existing L_{eq}	Future w/ Project L_{eq}	Difference
1	Southwest corner of Kearney Blvd. And West Ave.	61.4	68.6	+7.2
2	Northwest corner of Kearney Blvd. and West Ave.	61.4	68.7	+7.3
3	Southwest corner of Whitesbridge Ave. and West Ave.	63.2	69.2	+6.0
4	Northeast corner of Kearney Blvd. And West Ave.	62.1	70.0	+7.9
5	Southwest corner of Nielsen Ave. and Hughes Ave.	62.9	70.8	+7.9
6	Southeast corner of Nielsen Ave. and West Ave.	55.7	63.3	+7.6
7	Northeast corner of Whitesbridge Ave. and West Ave.	62.9	70.4	+7.5
8	Southwest corner of Whitesbridge Ave. and Thorne Ave.	62.2	70.3	+8.1
9	Northwest corner of Whitesbridge Ave. and Thorne Ave.	60.5	64.3	+3.8
10	Northeast corner of Whitesbridge Ave. and Thorne Ave.	60.0	63.9	+3.9
11	Southeast corner of Whitesbridge Ave. and Thorne Ave.	59.8	63.4	+3.6
12	Northeast corner of Kearney Blvd. And Thorne Ave.	62.0	64.3	+2.3
13	Southeast corner of Kearney Blvd. And Thorne Ave.	62.4	64.6	+2.2
14	Southwest corner of Kearney Blvd. And Thorne Ave.	60.9	63.0	+2.1
15	Southeast corner of Kearney Blvd. And West Ave.	61.4	63.5	+2.1

A comparison of Existing Conditions to Future Conditions With Project indicate that there will be no noise impacts. A substantial increase in noise level is generally defined as being in the range of 10 dB to 15 dB. Since the predicted Future Conditions With Project is not within this range, the impact of the Project on adjacent land uses will be less than a significant level as described above.

Temporary Noise Impacts

Temporary noise impacts will result from construction of the Project. As a result, mitigation measures should be implemented to reduce the potential for noise impacts during construction of the Project.

Mitigation/Implementation/Verification - Temporary Noise Impacts

Based upon the analysis conducted in Section 3.0, mitigation of projected noise impacts associated with construction of the Project will be required. The following mitigation measures are recommended to reduce the impacts of construction noise associated with the Project on adjacent residential land uses.

- construction of the Project, along areas adjacent to existing residential land use development, shall be restricted to weekdays and normal daytime hours (7:00 a.m. to 5:00 p.m.) to minimize impacts on residential neighborhoods or residential development;

- construction equipment shall be properly muffled and maintained; and

- the contractor work specifications for all construction activities shall reflect these measures and shall be subject to review and approval.

Implementation of the above mitigation measures would insure that impacts resulting from new development will be reduced to a less than significant level.

Airport Operations Noise Assessment

Current and projected noise contours for Fresno-Chandler Downtown Airport were calculated as part of the Draft *Fresno-Chandler Downtown Airport Master Plan Report*. Three scenarios were analyzed during this study process, and include:

- current aircraft operations volume and mix;
- potential future noise levels that would result from attainment of the moderate growth; and
- enhanced 2018 activity projections.

Noise contours for the baseline 2018 activity level forecast are essentially identical to the current contours and therefore are not shown.

In comparing the three scenarios and referencing Exhibits 5 through 7, Airport noise would increase by approximately 3 dB even with attainment of the enhanced forecasts. The noise contours are based upon the enhanced activity forecasts set in the *Airport Master Plan Report* (Source: Shutt Moen Associates, Airport Role and Activity, October 1998). These forecasts represent a high, but potentially attainable, long-term future level of activity for the Airport. The 2018 Enhanced Forecast reveals that the 60-dB CNEL contour expands in the northeast direction by about 1000 feet. This noise however, is generated by aircraft landings that are significantly quieter than takeoffs. The 65-dB CNEL contour will remain mostly within the Airport boundaries. Based on the resultant noise impact assessment described above and contained in the *Airport Master Plan Report*, no significant noise level impacts would result from implementation of the Project with respect to aircraft taxying, take-offs, and landings.

Mitigation/Implementation/Verification - Airport Operations Noise Impacts

There may be some adverse noise impacts on nearby residential properties from engine testing/run-up activity. The following mitigation measure is recommended to reduce the impacts of airport operations noise associated with the Project on adjacent residential land uses.

- Engine testing/run-up areas should be located a significant distance from residential uses contain noise reducing measures (i.e.: adequate fencing and walls) to properly mitigate noise impacts.

Implementation of the above mitigation measure would insure that noise impacts resulting from airport operations will be reduced to a less than significant level.

8.0 LIGHT AND GLARE

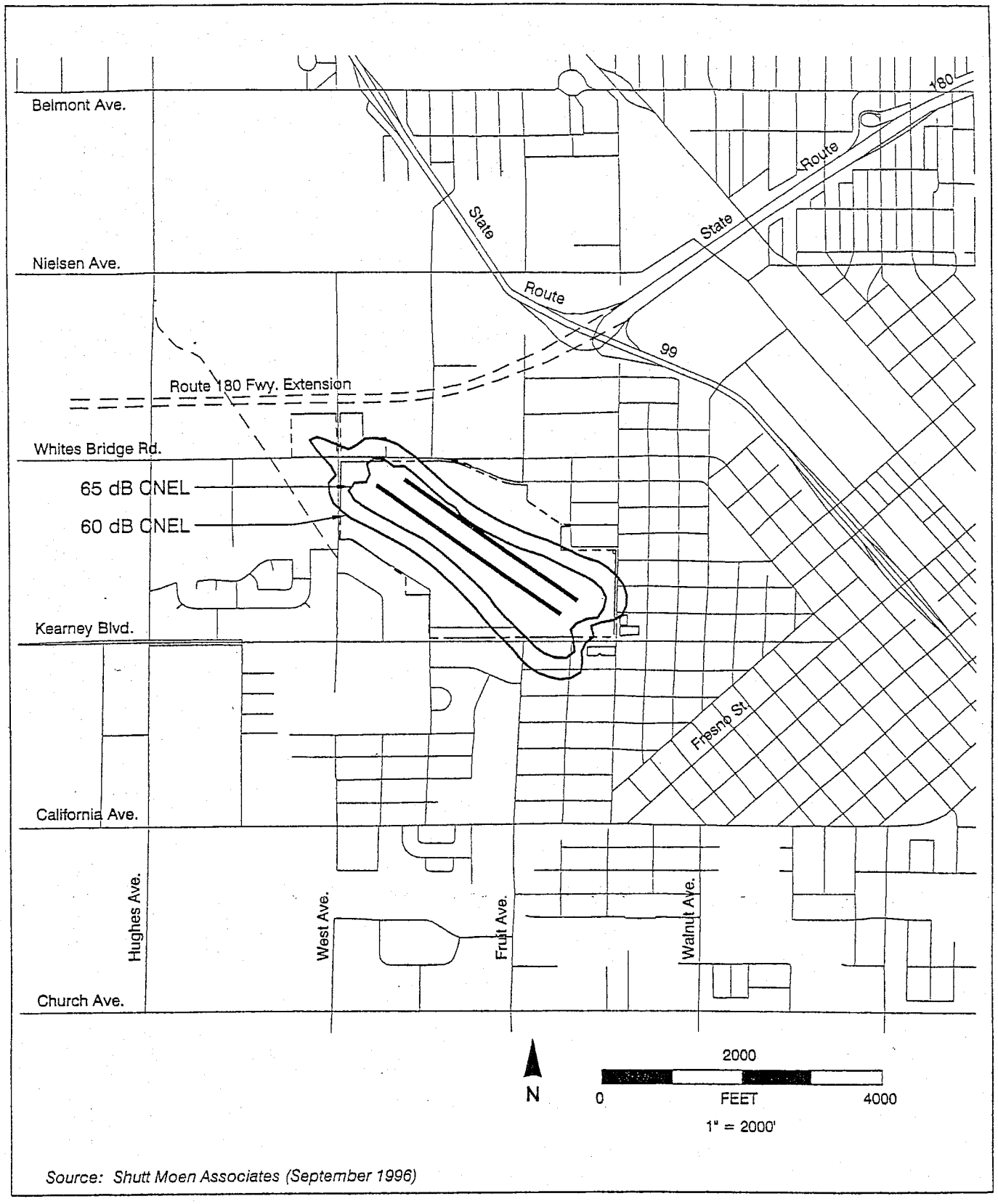
8.1 Production of Glare Which Will Adversely Affect Residential Areas

Although the checklist does not warrant ratings of "2" or more, because of the number of sensitive uses in the Project area adjacent to the Airport, a discussion is warranted.

The continuing development of the Airport facilities to accommodate increased operations will result in unavoidable increases in both light and glare in the immediate environs of the Airport. In recognition of this problem, as well as in response to the Airport's potential for substantial noise generation, the *Draft Fresno-Chandler Downtown Airport Environs Specific Plan* guidelines would discourage development of sensitive receptors proximate to the Airport.

9.0 LAND USE

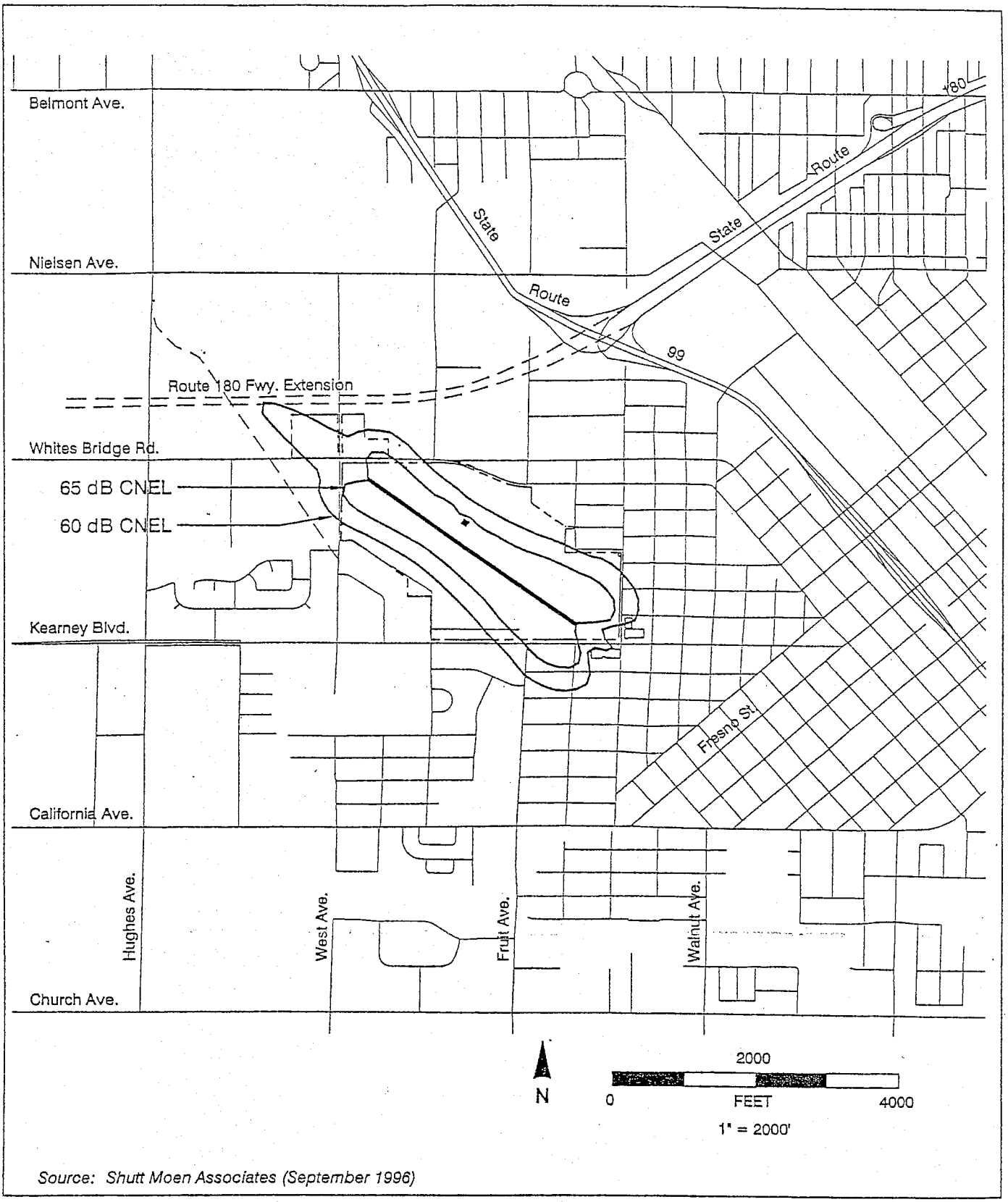
Although the checklist does not warrant ratings of "2" or more, because the Project does not propose a change in the existing planned land use, a discussion is warranted.



Source: Shutt Moen Associates (September 1996)

EXHIBIT 5

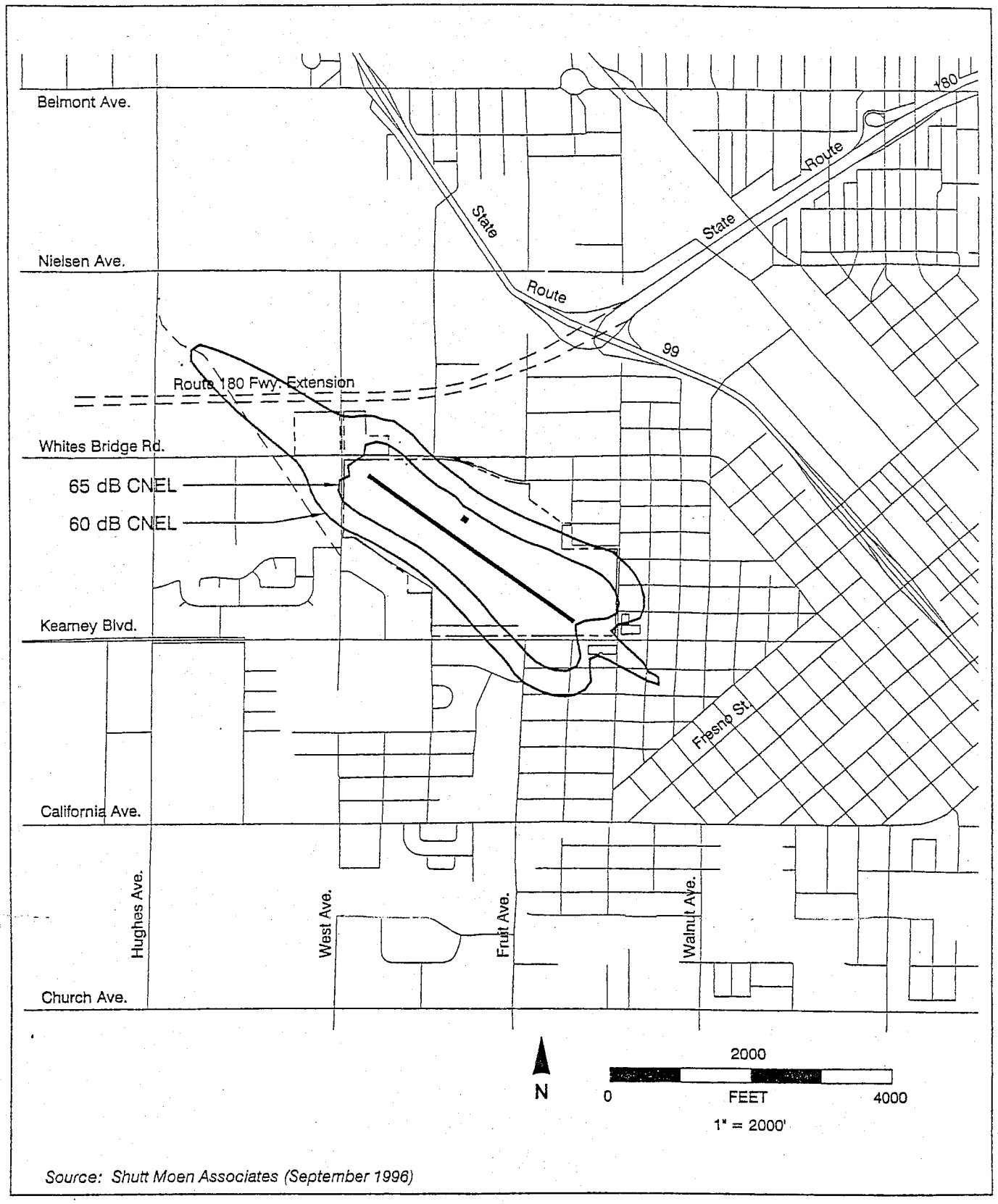
Noise Impact Area - 1997/98
Fresno-Chandler Downtown Airport



Source: Shutt Moen Associates (September 1996)

EXHIBIT 6

Noise Impact Area - 2018 Moderate Forecast
Fresno-Chandler Downtown Airport



Source: Shutt Moen Associates (September 1996)

EXHIBIT 7

Noise Impact Area - 2018 Enhanced Forecast
Fresno-Chandler Downtown Airport

9.4 Adverse Change in Existing or Planned Area Characteristics

The proposed *Fresno-Chandler Downtown Airport Master Plan* revises and updates the planned improvements to the Airport facilities to accommodate projected growth in small aircraft usage. That usage, either at the *moderate growth* or *enhanced growth* level can be accommodated by a single runway (12R-30L) with minor runway extension (from 3202 to 3612 feet). The plan proposes a total of 110 new hanger spaces of various types to increase the total to 232, with tie down spaces for an additional 136 aircraft. The plan proposes to preserve the historic terminal building, proposing designation on the National Register of Historic Places. Increased development for Airport related fixed-base operations is not proposed. Alternatives for aircraft fueling are identified.

The most significant proposed change to existing land use would be revenue generating, non-aviation development of approximately 70 acres of current Airport property. Runway 12L-30R and the parallel northeast taxiway would be closed. That land and the undeveloped land generally to the northeast of Runway 12-30L would be available for development. The plan proposes that potential uses might be light industrial or small business center activities. Presumably, the accompanying zoning might be C-M, M-1, or M-1-P.

Planned land uses for the area surrounding the Fresno-Chandler Downtown Airport are industrial to the north and west, and residential to the south and northeast (reference Exhibit 2). Planned land uses (residential, light industrial, commercial, and public) are also considered compatible with the proposed Project (reference Exhibit 3). The proposed revenue generating light industrial development of the 70 acres of Airport will be generally compatible with surrounding uses and improvements. Site plan review and specific development conditions should reasonably address compatibility with nearby residential properties. Given the access, substantial size and conducive site configuration, it is expected that adequate landscape and design measures can be incorporated into the light industrial development plans.

Mitigation/Implementation/Verification

- Conditions to ensure compatibility of the planned revenue generating private development of approximately 70 acres of Airport property with nearby residential properties should be implemented upon application for development entitlements including special permits, tract or parcel maps, and should be verified by the Development Department.

- Development of the Project shall be in accordance with adopted plans previously referenced.

Based upon the information and mitigation measures referenced above, land use impacts associated with the Project will not be significant.

10.0 TRANSPORTATION

This section identifies potential transportation impacts that may result from the proposed Project.

DESCRIPTION OF THE PROJECT AREA CIRCULATION SYSTEM

Regional access to the proposed Fresno-Chandler Downtown Airport is provided by State Routes (SR) 99 and 180. Local access is provided by numerous arterial and collector streets and roads within the Project area. The proposed SR 180 facility will provide access between southwestern portions of the City of Fresno and eastern and western Fresno County, SR 99 and SR 41 thereby enhancing east and west traffic flow. Currently, SR 180 is a freeway facility between SR 41 and SR 99. Within the Project area, SR 180 transitions along Whites Bridge Road/Amador Street, and other local facilities ("A" and "B" Streets and Stanislaus and Tuolumne Streets) and connects to SR 99. Exhibit 1 identifies these and other major regional access routes in and near the Project area.

To further understand and determine the potential types of impacts that may occur, it is important to review the specific characteristics of the Project. These characteristics are provided below.

- Traffic Generating Development: For purposes of this Traffic Impact Assessment, traffic to be generated by the Project includes Airport facility traffic considering future Airport operations, and traffic generated by proposed industrial/business center development.

- Access: Access to the Project site is from Chandler, Tielman, and West Avenues, and Kearney Boulevard.

- Parking: All parking will be provided on-site in accordance with City of Fresno development standards.

EXISTING STREET AND HIGHWAY SYSTEM

The City of Fresno's existing street and road system consists of a variety of facilities including expressways, arterials, collectors, and local streets and roads. In general, freeways provide for mobility with no direct land access (access limited to interchanges); expressways allow mobility with more frequent access to arterials, but no direct land access; arterials have mobility with access to collectors, some local streets, and major traffic generators; and collectors connect local streets with arterials and collectors and provide access to adjacent land uses. The following sections provide a synopsis of affected streets and highways in the Project area by roadway classification.

State Highways/Expressways

There are currently two freeways close to the Fresno-Chandler Airport. The major State facility serving the Fresno-Chandler Downtown Airport is SR 99. The other minor freeway is SR 180 which ends as a freeway facility east of SR 99. SR 180 is planned to extend as a freeway/expressway westerly along a new alignment north of Whites Bridge Road by the year 2020. The freeway section is currently planned to extend to the proposed Hughes/West Connector facility. SR 180 would then transition to an expressway facility east of the Hughes/West Connector and continue to Valentine Avenue. Finally, the facility would transition southwesterly to Whites Bridge Road along the existing SR 180 alignment.

Arterials

Generally, arterial streets are developed with right-of-way widths ranging from 100 to 120 feet with two to three lanes in each direction, left turn lanes at signalized intersections, and median islands. Certain arterials are also developed with bike lanes and on-street parking. Table 11 provides a list of existing Arterial facilities. By the year 2002, West Avenue, south of Chandler Avenue, will transition northwesterly and connect to and cross Whites Bridge Road. It will continue its northwesterly transition and intersect with the future SR 180 Expressway and connect with Hughes Avenue one-quarter mile south of Nielsen Avenue. This planned improvement will also result in the closure of portions of West Avenue between Chandler Avenue and Nielsen Avenue.

TABLE 11
ARTERIAL STREETS

NORTH-SOUTH	EAST-WEST
West Avenue Hughes/West Connector (year 2020)	Whites Bridge Road/Amador Street "A" and "B" Streets, Stanislaus/Tuolumne Streets
Thorne Avenue	California Avenue
Tielman Avenue	

Collectors

Collectors are generally constructed along 84 foot right-of-ways with two lanes in each direction and parking along both sides. Streets currently designated by the City of Fresno as collector facilities within the Project area are identified in Table 12.

TABLE 12
COLLECTOR STREETS

NORTH-SOUTH	EAST-WEST
Fruit Avenue	Kearney Boulevard
Hughes Avenue	Nielsen Avenue

Local Streets And Roads

The remainder of the streets near the proposed Project site are classified as local facilities. Local roads provide access to adjacent land uses and to arterial and collector streets. Local streets should not be expected to carry traffic in lieu of arterial or collector facilities.

POLICIES TO MAINTAIN LEVEL OF SERVICE

An important goal is to maintain acceptable levels of service along the highway, street, and road network. To accomplish this, the City of Fresno adopted minimum levels of service in an attempt to control congestion that may result as new development occurs. Currently, the City of Fresno, the County of Fresno, and Caltrans consider a LOS "D" to be acceptable for urban areas. Specific actions intended to ensure implementation of these minimum levels of service should include the following:

- enforce LOS standards that are practical and understandable and that meet an affected agency's objective to provide a high level of mobility for residents and high levels of mobility for activity centers. Where adopted levels of service are exceeded, complete all possible improvements and implement measures to reduce additional burden to roadways, such as the synchronization of traffic signals;

- all new facilities or changes should be designed to operate at the policy LOS or better for a period of at least 20 years following their construction. The responsibility of the costs associated to accomplish this is established by considering the cause of the deficiency; and

- permit new development projects only when circulation facilities already exist or will be completed as part of, or prior to, completion of a project so that project-related traffic does not cause level of service to deteriorate below acceptable levels.

METHODOLOGY - STREET AND HIGHWAY IMPACT ASSESSMENT

When preparing a TIA, guidelines set by the affected agencies must be followed. In analyzing street and intersection capacities, Level of Service (LOS) methodologies must be applied. LOS standards are applied by transportation agencies to quantitatively assess a street and highway system's performance. In addition, safety concerns must also be analyzed to determine the need for appropriate mitigation resulting from increased traffic near schools, and other evaluations such as the need for signalization or other stop control improvements, if applicable.

Intersection Level of Service

Levels of service can be determined for both signalized and unsignalized intersections. As noted in the 1994 Highway Capacity Manual, LOS criteria are stated in terms of the average stopped delay per vehicle, over a 15 minute analysis period (reference Tables 13 and 14 which describes a grade LOS compared to seconds of delay).

Segment Level of Service

According to the 1994 Highway Capacity Manual (HCM), segment or street or highway LOS is categorized by two parameters of traffic: uninterrupted and interrupted flow. Uninterrupted flow facilities do not have fixed elements, such as traffic signals that cause interruptions in traffic flow. Interrupted flow facilities do have fixed elements that cause an interruption in the flow of traffic, such as stop signs and

signalized intersections along streets and roads. A roadway "segment" is defined as "a stretch of roadway generally located between signalized or controlled intersections"(reference Table 15 for a complete definition of segment levels of service).

HCM-based analysis considers a calculation of traffic volume, previously described, and a number of variables such as the number of lanes for each movement, signal timing, and terrain. To determine the existing LOS for each street segment described below, segment LOS was estimated using the Modified HCM-Based LOS Tables (Florida Tables), which are approved for use in Fresno County. The Tables consider the capacity of individual segments based on numerous roadway variables (freeway design speed, signalized intersections per mile, number of lanes, saturation flow, etc.). These variables were identified and applied in the LOS Tables to reflect existing traffic LOS conditions in the City of Fresno. The variables are also consistent with HCM variables referenced above in Table 15. A complete description of the Modified Tables and the variables applied to calculate segment LOS is included in the Technical Appendices.

TABLE 13
TWO WAY AND FOUR WAY STOP CONTROLLED INTERSECTIONS
LEVEL OF SERVICE DEFINITIONS
(1995 Highway Capacity Manual)

Level of Service	Definition	Average Total Delay (sec/veh)
A	Describes operations with very low delay. This level of service occurs when there is no conflicting traffic for minor street.	≤ 5.0
B	Describes operations with moderately low delay. This level generally occurs with a small amount of conflicting traffic causing higher levels of average delay.	> 5.0 and ≤ 10.0
C	Describes operations with average delays. These higher delays may result from a moderate amount of minor street traffic. Queues begin to get longer.	> 10.0 and ≤ 20.0
D	Describes a crowded operation, with below average delays. At level D, the influence of congestion becomes more noticeable. Longer delays may result from shorter gaps on the mainline and an increase of minor street traffic. The queues of vehicles are increasing.	> 20.0 and ≤ 30.0
E	Describes operations at or near capacity. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor gaps for the minor street to cross and large queues.	> 30.0 and ≤ 45.0
F	Describes operations that are at the failure point. This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. Insufficient gaps of suitable size exist therefore not allowing minor traffic to cross safely.	> 45.0

TABLE 14
INTERRUPTED TRAFFIC FLOW FACILITIES
(SIGNALIZED INTERSECTIONS)
LEVEL OF SERVICE
(1995 Highway Capacity Manual)

Level of Service	Definition	Average Total Delay (sec/veh)
A	Describes operations with very low delay. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delays.	≤ 5.0
B	Describes operations with moderately low delay. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 5.0 and ≤ 15.0
C	Describes operations with average delays. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 15.0 and ≤ 25.0
D	Describes a crowded operation, with below average delays. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 25.0 and ≤ 40.0
E	Describes operations at or near capacity. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 40.0 and ≤ 60.0
F	Describes operations that are at the failure point. This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	> 60.0

TABLE 15
SEGMENT LEVEL OF SERVICE DEFINITIONS
(1995 Highway Capacity Manual)

Level of Service	Definition
A	Represents free flow. Individual vehicles are virtually unaffected by the presence of others in the traffic stream.
B	Is in the range of stable flow, but the presence of other vehicles in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
C	Is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream.
D	Is a crowded segment of roadway with a large number of vehicles restricting mobility and a stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
E	Represents operating conditions at or near the level capacity. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
F	Is used to define forced or breakdown flow (stop-and-go gridlock). This condition exists when the amount of traffic approaches a point where the amount of traffic exceeds the amount that can travel to a destination. Operations within the queues are characterized by stop and go waves, and they are extremely unstable.

Affected Streets And Highways

Street and highway segments near and adjacent to the Project site were analyzed to determine facility level of service (LOS) utilizing Highway Capacity Methodologies (HCM) based methodologies described above, and include:

- Nielsen Avenue between Marks and Thorne Avenue;
- Whites Bridge Road/Amador Street between Marks and Stanislaus/Tuolumne Streets;
- Kearney Boulevard between Marks and Fresno Street;
- California Avenue between Marks and Fresno Street;
- Hughes Avenue between California Avenue and Nielsen Avenue;
- West Avenue between California Avenue and Nielsen Avenue; and
- Thorne Avenue between California Avenue and Nielsen Avenue.

In addition to the segment LOS analysis, it is also necessary to assess LOS conditions at intersections near or adjacent to the Project site. To identify existing intersection LOS, the following intersections were analyzed:

- Nielsen Avenue at West Avenue;
- Whites Bridge Road at Marks Avenue;
- Whites Bridge Road at West Avenue;
- Whites Bridge Road at Teilman Avenue;
- Kearney Boulevard at Marks Avenue;
- Kearney Boulevard at Hughes Avenue;
- Kearney Boulevard at West Avenue;
- Kearney Boulevard at Thorne Avenue; and
- California Avenue at Thorne Avenue/Fresno Street.

PROJECT TRAFFIC IMPACT ASSESSMENT

10.2 Cumulative Increase in Traffic on a Major Street for Which Capacity Deficiencies are Projected

To assess the impacts that the Project may have on surrounding urban arterials and intersections, the first step is to determine site specific traffic conditions. To accomplish this task, both segment and intersection level of service (LOS) analyses were conducted consistent with the methodologies described above. The first step is to assess Existing Conditions by collecting traffic volumes along the existing facilities. Traffic volumes were obtained from field counts (intersection turning movements and segment counts), the City of Fresno, the Council of Fresno County Governments (COFCG), and Caltrans.

Existing Conditions - Level of Service

Segment Level of Service Analysis

Table 16 describes traffic characteristics associated with LOS grade levels for roadway segments in the Project area on an average daily traffic basis. A roadway segment is defined as a stretch of roadway generally located between signalized or controlled intersections. The HCM-based LOS analysis is based upon a calculation of traffic volume and other variables previously described, such as the number of lanes and signalized intersections along the segment.

Results of the LOS segment analysis along the existing street and highway system in the Project area are reflected in Exhibit 8, and are further described in the Technical Appendices. Table 16 also provides a grade LOS for other traffic impact scenarios including Future Year conditions considering year 2020 planned growth and development with and without the Project.

Intersection Level of Service Analysis

Existing turning movement traffic volumes at each Project area intersection are shown in Exhibit 9. Standard twelve foot (12') lanes were applied for purposes of the LOS analysis. All intersection LOS

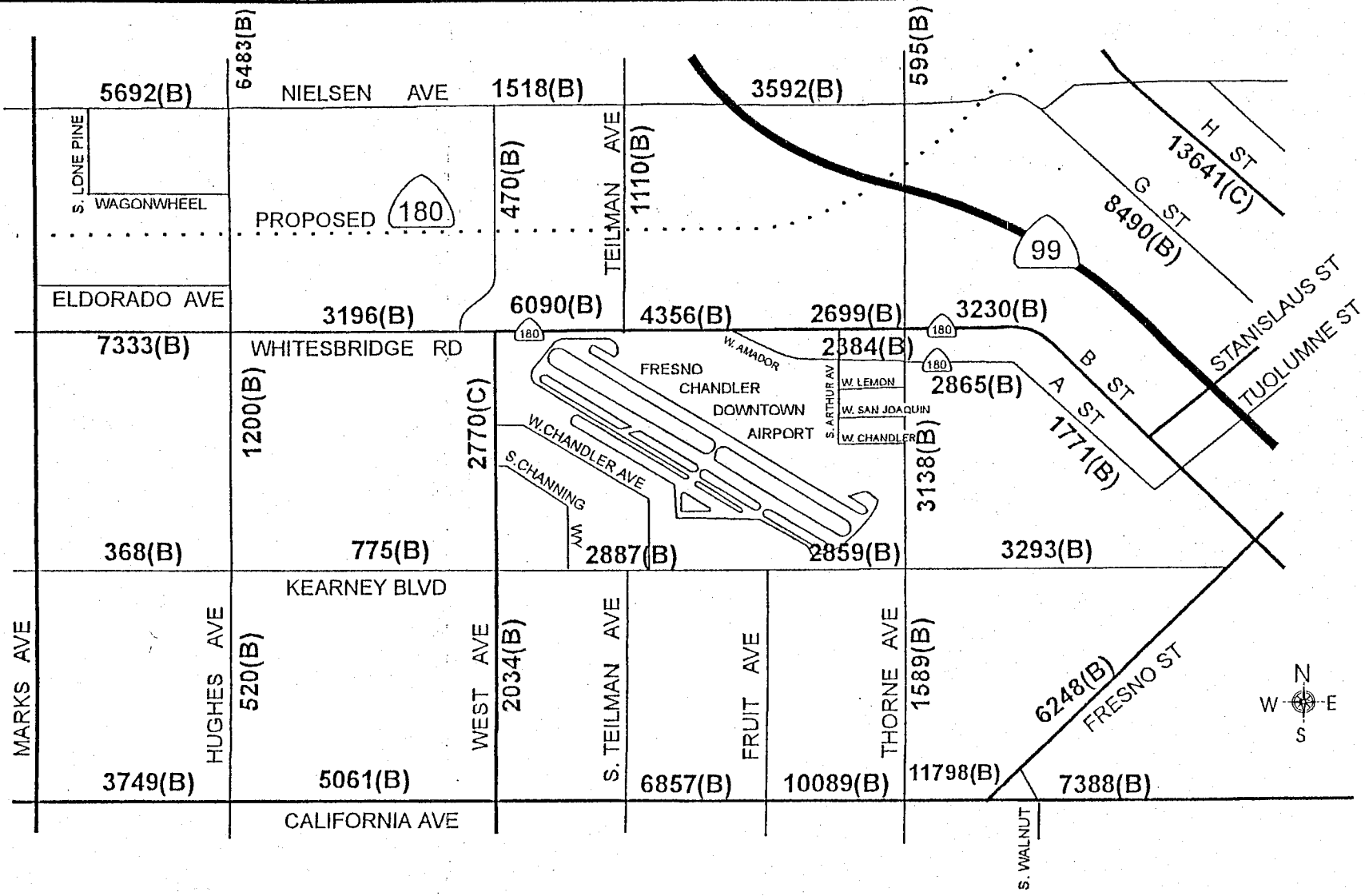
TABLE 16
SEGMENT AND INTERSECTION LOS FOR EACH TIA SCENARIO

Segments:*	1998 Existing Conditions	Year 2020 Future Without Development	Year 2020 Future With Development
Nielsen Ave. between Marks Ave. and Thorne Ave.	B	B	B
Whites Bridge Road between Marks Ave. and Stanislaus St.	B	B	B
Kearney Blvd. between Marks Ave. and Fresno St.	B	B	B
California Ave. between Marks Ave. and Fresno St.	B	B	B
Hughes Ave. between California Ave. and Nielsen Ave.	B	B	B
West Ave. between California Ave. and Nielsen Ave.	C	C	C
Thorne Ave. between California Ave. and Nielsen Ave.	B	B	B
Intersections:**			
Nielsen Ave. at West Ave.	A		
Whites Bridge Road at Marks Ave.	C		
Whites Bridge Road at West Ave.	C / B		
Whites Bridge Road at Teilman Ave.	B		
Kearney Blvd. at Hughes Ave.	A		
Kearney Blvd. at West Ave.	A		
Kearney Blvd. at Thorne Ave.	B		
California Ave. at Thorne Ave./Fresno St.	C		

Notes: * Worst subsegment Level of Service designation within overall defined segment. See appropriate exhibit for further details.

** Future Year 2020 intersection analysis was not conducted based upon the inability to assign future traffic model volumes to the future street and highway system with an acceptable level of accuracy.

Fresno - Chandler Downtown Airport Project Area



Existing 1998 Segment Volumes/LOS

LEGEND:

Street/Highway Classification

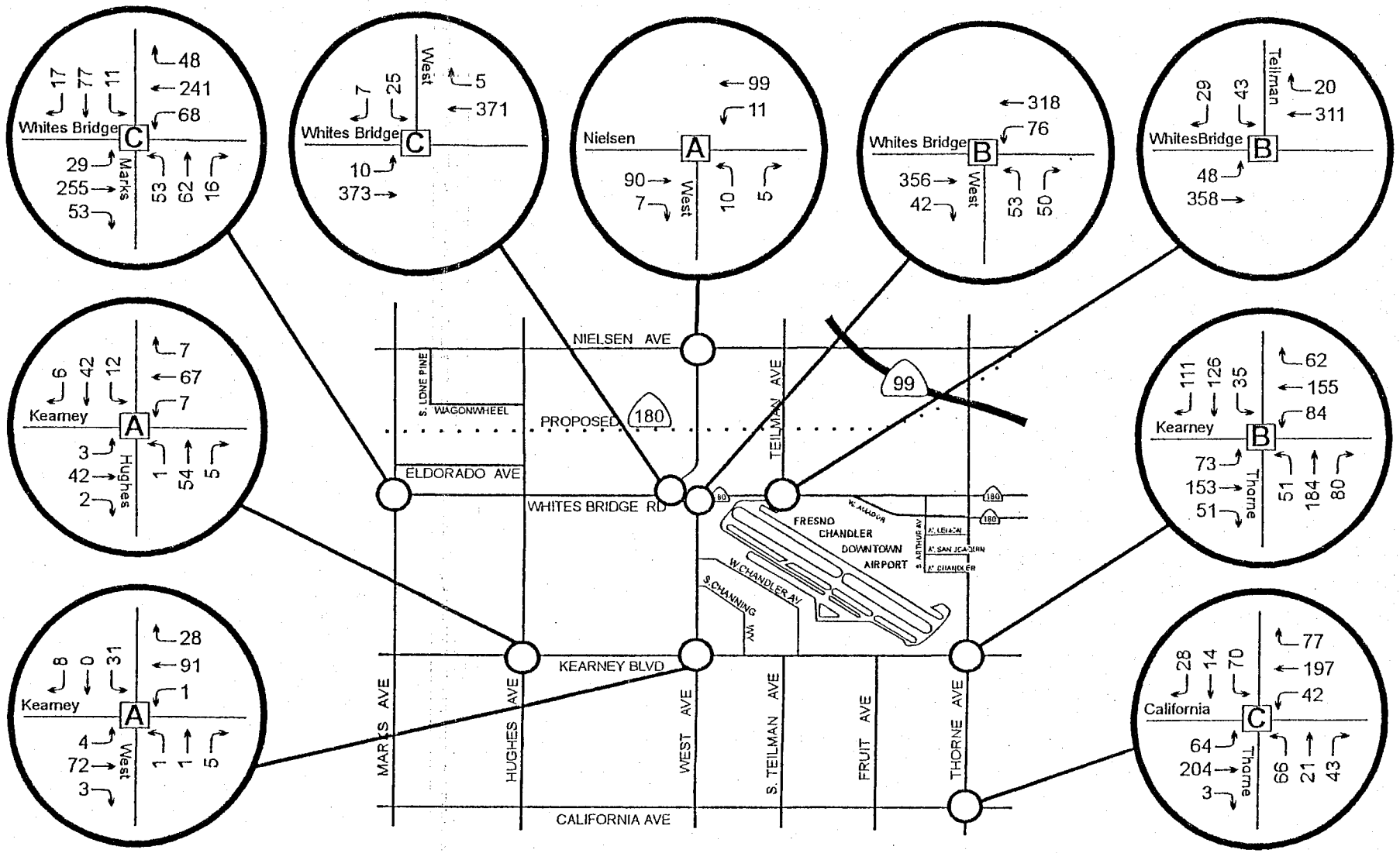
Collector
Arterial
Freeway

xx,xxx (x) Daily Segment Volumes/LOS

VRPA TECHNOLOGIES

EXHIBIT 8

Fresno - Chandler Downtown Airport Project Area



Existing 1998 Turning Movement Volumes/LOS

LEGEND: PM Peak Hour Intersection Volumes/LOS

VRPA TECHNOLOGIES

EXHIBIT 9

analyses were estimated using Highway Capacity Software (HCS), Signals - Version 2.1. For reference, HCS LOS worksheets are provided in the Technical Appendices. Table 16 and Exhibit 9 identify the existing LOS for all the studied intersections. As indicated, the current LOS along streets and highways in the Project area does not exceed affected agency LOS standards.

Year 2020 Future Without Project Conditions - Level of Service

Segment Capacity Analysis

To estimate future year 2020 segment LOS considering the proposed Project, future trips were identified using the Year 2020 Regional Traffic Model developed by COFCG. The model reflects future traffic generated by planned development within and adjacent to the Project area. Results of the LOS segment analysis along the future year 2020 street and highway system without the Project are reflected in Table 16 and Exhibit 10, and are further described in the Technical Appendices. Referencing Table 16, the segment LOS along the future street and highway segments in the Project area does not exceed the minimum LOS policy of "D" set by affected agencies except along one facility - SR 180 between the Hughes/West Connector and Valentine Avenue. This segment is projected to function under LOS "F" conditions by the year 2020. The facility along this segment is planned as a 4-lane expressway. At least six lanes would be required to accommodate the projected volumes.

Year 2020 Future With Project Conditions - Level of Service

Impacts within the Project area resulting from the proposed Project are described in this Section. To estimate future year 2020 segment LOS considering the proposed Project, trips generated by the Project were assigned to the affected streets and highways in the Project area. Trip generation for the Project was estimated using the Institute of Transportation Engineers' (ITE) Trip Generation Manual.

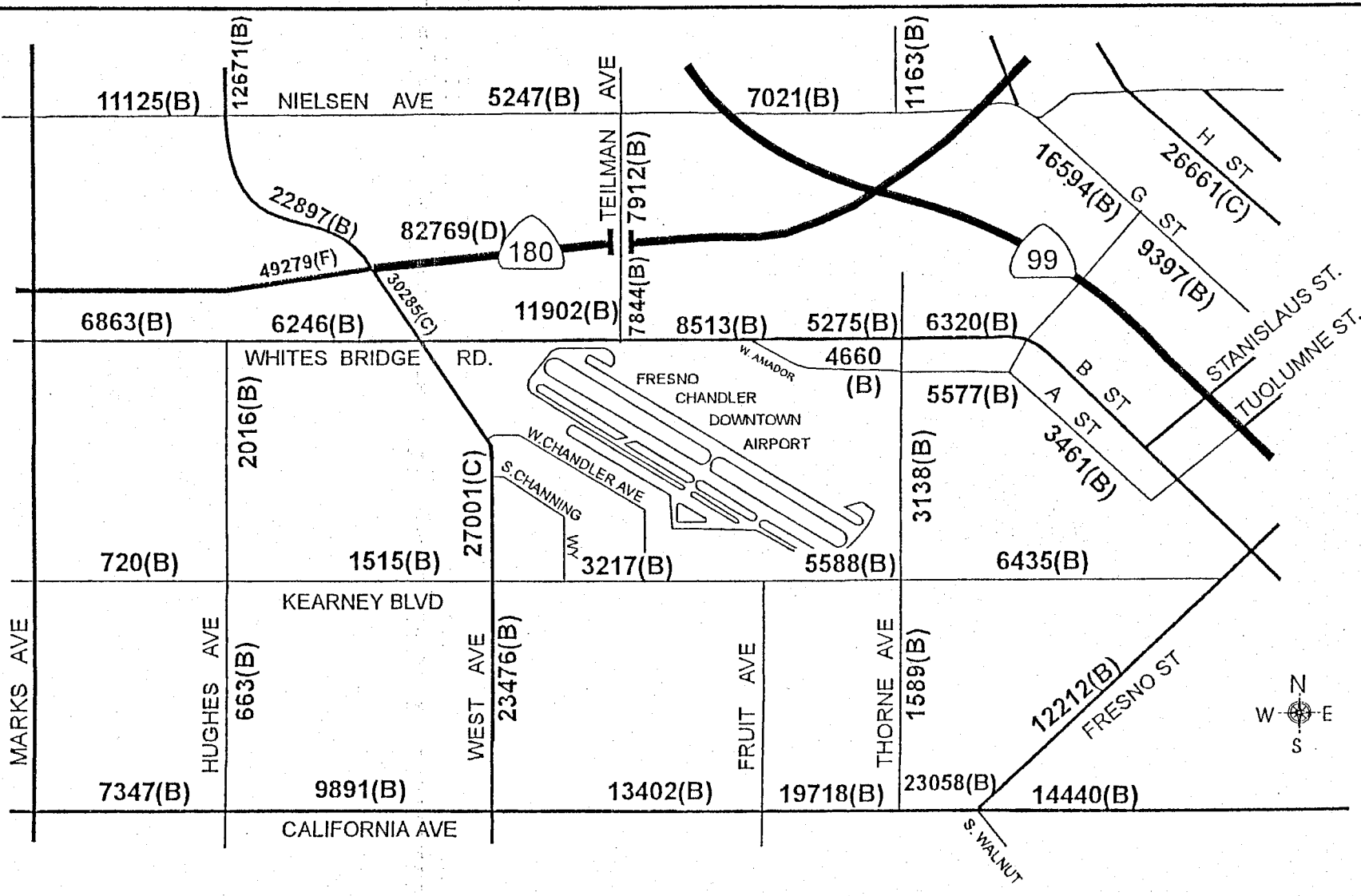
Segment Capacity Analysis

Table 16 and Exhibit 11 provide segment LOS for the future conditions with the proposed Project. As shown from the analysis, the segment LOS along analyzed roadway segments in the Project area remain the same as those identified under future LOS without the Project.

Mitigation/Implementation/Verification of Traffic Impacts

All roadway segments and intersections in the Project area in the current year and in year 2020 with and without the Project are expected to operate at acceptable levels of service. Again the only exception is that segment of the planned SR 180 between the Hughes/West Connector and Valentine Avenue. Based upon COFCG Traffic Model volumes for the year 2020, that segment of SR 180 is expected to function at LOS "F" with or without the Project. To insure proper mitigation of this deficient segment, the following measure is recommended:

Fresno - Chandler AIRPORT Area



Year 2020 Segment Volumes - Without Project

LEGEND:

Street/Highway Classification

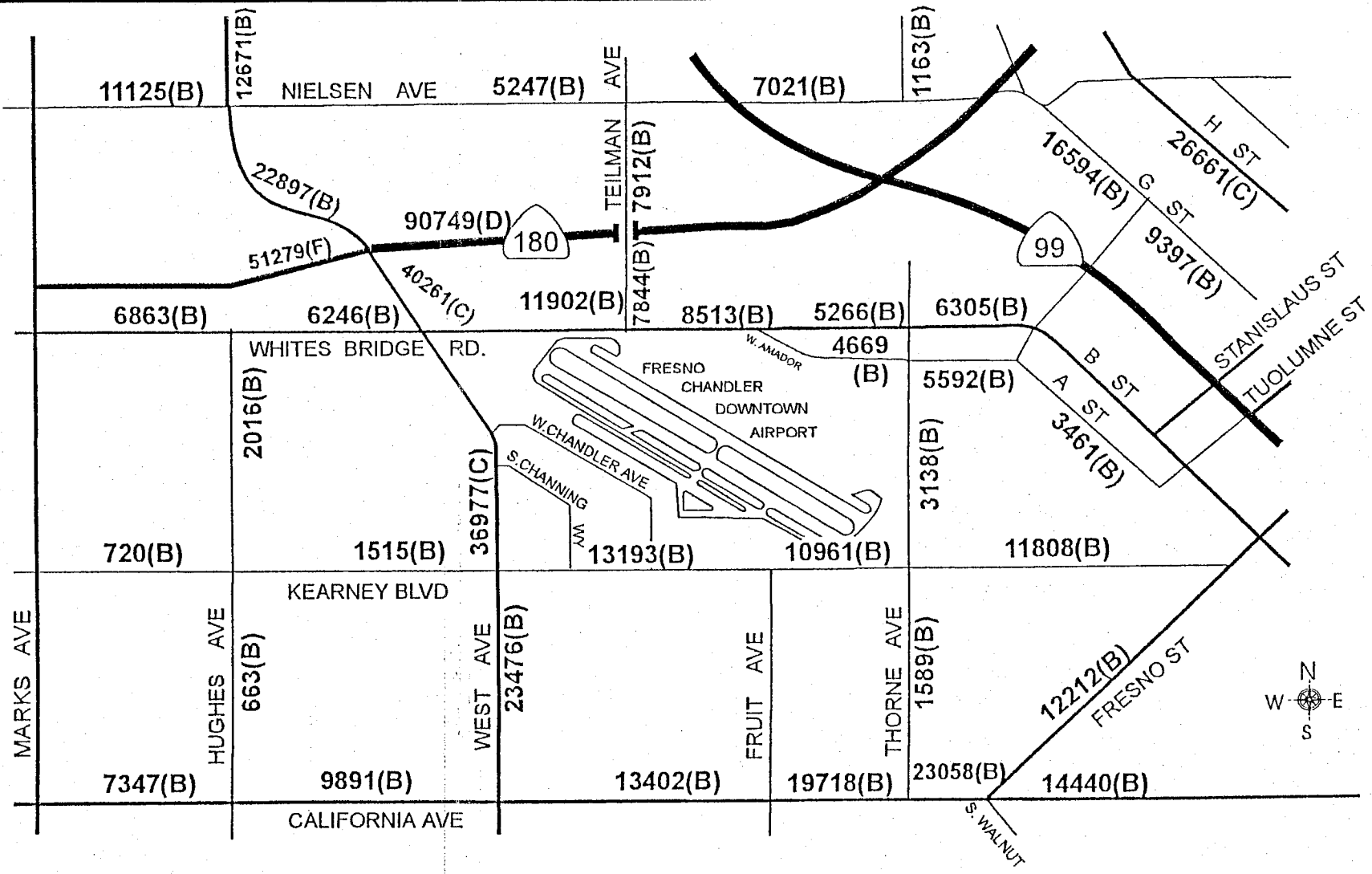
- Collector
- Arterial
- Expressway
- Freeway

xx,xxx (x) Daily Segment Volumes/ LOS

VRPA TECHNOLOGIES

EXHIBIT 10

Fresno - Chandler Downtown Airport Project Area



Note: Volume differences between Yr 2020 With and Without Project, when less than 500 ADT, were not reflected on this Exhibit.

Year 2020 With Project Segment Volumes/LOS

LEGEND:

Street/Highway Classification

- Collector
- Arterial
- Expressway
- Freeway

xx,xxx (x) Daily Segment Volumes/ LOS

VRPA TECHNOLOGIES

EXHIBIT 11

- The City of Fresno should coordinate with the State and other affected agencies to develop a comprehensive financing strategy that would ensure proper improvement of SR 180 between the Hughes/West Connector and Valentine Avenue. Current funding to widen this segment of SR 180 from four to six lanes is not contained in the Fresno County Regional Transportation Plan (RTP) or Transportation Improvement Program or in other Capital Improvement Programs developed by the City of Fresno, Fresno County, or the State.

Even though the Project would contribute incrementally to regional, cumulative transportation impacts, daily trips generated by the Project itself are not considered significant. The Project may exacerbate local circulation conflicts, however, the impact is not felt to be significant.

Project Access

Direct access to the Airport site is not expected to change over time. Since major access to the Airport is provided along Kearney Boulevard, which is an historic, tree-lined street that connects the City of Fresno with the Kearney Regional Park facility located in western Fresno County, preservation of this unique facility is required. Kearney Boulevard dates back to 1887 and has an historical designation as a "special boulevard," a "scenic highway," and an "ornamental pleasure drive" by community groups over the years.

Mitigation/Implementation/Verification of Project Access Impacts

Project access impacts are not anticipated. Access to the proposed light industrial/business center development on Airport property will be considered as development proposals are reviewed by the City of Fresno Development, Airports, and Public Works Departments. During such review, potential impacts on the physical and aesthetic value of Kearney Boulevard should be considered.

PUBLIC TRANSIT

Existing mass transportation services in the City of Fresno consist of both public transit and AMTRAK rail passenger service. Transit services include inter-city, fixed-route, and demand-responsive operations. Common carriers within the City of Fresno include AMTRAK, Greyhound, Transportes Intercalifornias, California Yosemite Tours, and Orange Belt Stage Lines.

Local transit service in the area is provided by Fresno Area Express (FAX) operated by the City of Fresno Transportation Department. FAX provides two categories of public transportation service in the area: fixed-route service for the general public, and Handy Ride's demand-responsive service. Handy Ride provides service to elderly and disabled individuals who are unable to ride the fixed-route system.

Fixed-route transit services in the Project area is provided along Line 30 which runs along Kearney Boulevard and Trinity Street.

Mitigation/Implementation/Verification of Public Transit Impacts

Based upon the identification and analysis of current transit ridership within the Project area, Project-related impacts that would interrupt transit movement and/or ridership are not anticipated.

BIKEWAYS

Local agencies in Fresno County have recognized the importance of bikeways in the Fresno region. Currently, bikeways have been constructed along 100 miles of roadway or other easements within Fresno County. In its 1984 General Plan, the City of Fresno implemented a new construction standard for collectors and arterials. The standard requires that new streets in developing areas would be designed with a five-foot allowance along each side of the roadway for bike lane facilities. The adoption of this standard has promoted long-term development of fully signed and striped bikeways in the City. This provision has avoided the conflict of losing on-street parking to bike lanes that were not part of the original street design.

Mitigation/Implementation/Verification of Bikeway Impacts

Currently, a separated bike path facility is provided along Kearney Boulevard adjacent to the Airport. Impacts on the bike path facility are not anticipated.

10.6 Substantial Increases in Rail and/or Air Traffic

Historical aircraft operations data for the Fresno-Chandler Downtown Airport data indicates that air traffic peaked at about 130,000 aircraft operations in 1970. By 1980, the last full year of tower operation, aircraft operations had dropped to roughly 66,000. Since closure of the tower in 1981, activity information has been limited to sample counts conducted over limited time periods. As a result, annualized estimates were derived from these counts or other data sources.

The City, as well as Airport staff, has conducted a detailed review of the aircraft count data and has statistically analyzed the records. Also, random spot checks were developed to validate the results. The statistical analysis over the last four years (1995 through mid-1998) has shown a relatively constant level of Airport use ranging between 40,000 and 43,000 annual aircraft operations.

From a base year count of 185 in 1995, the number of based aircraft is projected to first stay relatively constant, reaching just 187 in 2000, but then jump to 217 by 2010 and 249 in 2020. This growth equates to a 1.5% annual increase between 2000 and 2010 and a just slightly slower rate of 1.4% per year in the 2010-to-2020 time period.

Mitigation/Implementation/Verification of Air Traffic Impacts

Based upon the analysis of future Airport operations and provisions contained in the Airport Environs Plan, Project impacts are not considered environmentally significant.

11.0 URBAN SERVICES

Although the checklist does not warrant ratings of "2" or more, because of the desirability of subsequent review of storm water drainage capacity by the Fresno Metropolitan Flood Control District, a discussion is warranted.

11.7 Availability of Storm Water Drainage Facilities (On or Off-Site)

Storm Water Drainage Facility Impacts

The Fresno-Chandler Downtown Airport is located within the Fresno Metropolitan Flood Control District. With the exception of two small areas within Drainage Area ZZ, the Airport is located within Drainage Area FF which is well served by an internal system of progressive capacity drain lines that feed into a major interceptor located in the Kearney Boulevard right-of-way. If the plan for revenue generating development of approximately 70 acres of Airport property is approved for Light Industrial/Business Center uses, the City of Fresno should seek verification from the District that its Kearney interceptor serving Drainage Area FF could handle storm water runoff. The extreme northwest portion of the Airport property within Drainage Area ZZ is within the runway clear zone and is planned to remain undeveloped, although a slight amount of additional land coverage will result from runway and taxiway extensions. Another small portion of the Airport property located within ZZ is generally south of Whites Bridge Road and east of the Fruit Avenue alignment on which a temporary bonding basin is now located and may be developed causing increased storm water runoff. However, the terminus of the proposed 30 inch Whites Bridge Road interceptor may be too far away to warrant constructing a drain line. If curb and gutter along Whites Bridge Road are deemed to be insufficient to accommodate drainage of that portion, then the existing temporary drainage basin might be retained or increased in capacity.

Mitigation/Implementation/Verification

- The design and construction of on-site airfield drainage improvements will be completed as conditions of project approval and development in accordance with applicable policies and standards. Private development of the 70 acres of Airport property will be conditioned with payment of fees to the Fresno Metropolitan Flood Control District (FMFCD) to fund implementation, maintenance, and management of the system in accordance with the District Master Plan.

Implementation of the above mitigation measure would insure that impacts resulting from the Project will be reduced to a less than significant level.

12.0 HAZARDS

Although the checklist does not warrant ratings of "2" or more, because of the number of sensitive uses in the Project area adjacent to the Airport, a discussion is warranted.

12.1 Risk of Explosion or Release of Hazardous Substances

Based upon site and agency review, there are no significant hazardous conditions of concern within the Project area. According to research obtained from the California Integrated Waste Management Board, there are no hazardous waste sites or facilities currently affecting the Project site.

12.4 Potential Hazards from Aircraft Accidents

Since 1981 there have only been nine flight related small aircraft incidents at the Fresno-Chandler Downtown Airport.

Mitigation/Implementation/Verification of Hazard Impacts

Based upon the analysis of potential hazardous waste sites and considering future Airport operations and provisions contained in the Airport Environs Plan (as recommended by the California Aeronautics Division of Caltrans) and the potential for aircraft accidents, Project impacts are not considered environmentally significant.

13.0 AESTHETICS

Although the checklist does not warrant ratings of "2" or more, because of the number of sensitive uses in the Project area adjacent to the Airport, a discussion is warranted.

13.2 Removal of Street Trees or Other Valuable Vegetation

Project improvements will not significantly impact aesthetic values in the Project area. Of particular concern is the aesthetic importance of Palm trees lining Kearney Boulevard adjacent to the Airport. Given the type of improvement associated with the Project, aesthetic impacts are not expected to occur.

Mitigation/Implementation/Verification of Aesthetic Impacts

- To ensure that aesthetic impacts do not occur, the City should review all development plans considering the aesthetic importance of Palm trees lining Kearney Boulevard adjacent to the Airport.

Implementation of the above mitigation measure would insure that impacts resulting from the Project will be reduced to a less than significant level.

14.0 HISTORICAL/ARCHAEOLOGICAL

Although the checklist does not warrant ratings of "2" or more, because of the number of sensitive uses in the Project area adjacent to the Airport, a discussion is warranted.

14.2 Construction or activity Incompatible with Adjacent Historic Site

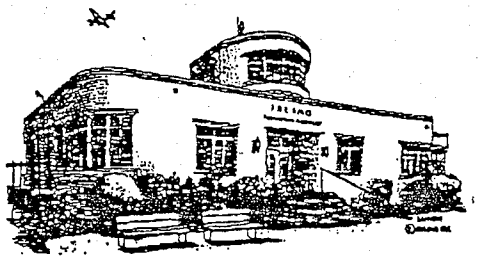
Situated in California's San Joaquin Valley just 11/2 miles west of downtown Fresno, Fresno-Chandler Downtown Airport was once home to the city's passenger airline facility and was the only publically owned airport. Although passenger airline service is now provided at the other city-owned airport - Fresno Yosemite International (formerly Fresno Air Terminal), located 6 miles to the northeast - Chandler continues to be an important general aviation airport serving the central San Joaquin Valley.

The area surrounding Fresno-Chandler Downtown Airport - known as the Edison Community - is an historic and ethnically diverse district that was one of the first neighborhood areas developed when Fresno was founded in 1872. The neighboring land uses are also mixed. To the east and south are mostly residential areas, while lands to north and west consist of various industrial, agricultural, and semi-rural residential uses.

The Airport's principle access route is Kearney Boulevard, an historic, tree-lined street that provides major access to the Airport. The road dates back to 1887 and has historical designation as a "special boulevard," a "scenic highway," and an "ornamental pleasure drive." The north side of the airport is bordered by Whites Bridge Road and Amador Street which together comprise the current SR 180. Plans are proceeding to construct an extension of SR 180 as a freeway west of SR 99. The planned alignment is about 900 feet north of Whites Bridge Road.

Structures

Several of the buildings still in use at the airport date from the 1930s and 1940s when it housed Fresno's passenger airline services. The age of these buildings being 50 years or greater makes them eligible for listing in the Fresno Local Official Register and the National Register of Historic Places. None of the airport buildings are currently listed in either register. Among the qualities that make a structure suitable for listing include being "particularly representative of a distinct historical period, type, style, region, or way of life." A structure can be nominated for historical designation by the owner of a property as well as by local agencies.



Fresno-Chandler Downtown Airport buildings that are old enough to qualify for local and national historic place designation include the following:

- Terminal Building - The terminal building is the structure at Fresno-Chandler Downtown Airport that most warrants consideration for inclusion in local and national registers of historic places. The building is significant both for it's architectural style and for it's historic use as the city's airline terminal during the late 1930s and 1940s. The adjacent office building is also representative of that era.

- Aircraft Maintenance Hangar South of Airport Road - This hangar (currently occupied by Romano Aviation) is another airport building that may qualify for listing. This building apparently dates from the 1930s. Its construction of solid redwood makes it unique for a hangar building. Research needs to be done to determine the building's construction date and original configuration and use.

- Conventional Hangars North of Airport Road - Together with the terminal building, these hangars date from the historic flight line of the airport. Four of these hangars date from the 1940s. Their arched, steel-truss roof construction is typical of World War II era hangar construction. Many similar examples remain at airports today. These structures do not appear to warrant official historic designation at the present time.

There are no known archaeological sites.

Mitigation/Implementation/Verification of Historic/Archaeological Impacts

- To preserve the historic structures located at the Airport facility, the City should nominate the above listed structures for historical designation.

Implementation of the above mitigation measure would insure that impacts resulting from the Project will be reduced to a less than significant level.

15.0 ENERGY

Although the checklist does not warrant ratings of "2" or more, because of the number of sensitive uses in the Project area adjacent to the Airport, a discussion is warranted.

15.1 Use of Substantial Amounts of Fuel or Energy

The relative increase in vehicle trips generated by the Project is not expected to significantly impact energy consumption.

Mitigation/Implementation/Verification of Energy Impacts

Energy impacts resulting from the proposed Project improvements therefore are anticipated to be less than significant.

DETERMINATION

On the basis of this initial evaluation, it is determined that the proposed Project is consistent with all applicable City plans and policies and conforms to all applicable zoning standards and requirements. It is further determined that the proposed Project will not have a significant effect on the environment. This is because the mitigation measures required as conditions of Project approval, which have been added to the Project as defined, are conditions upon which a mitigated negative declaration can be recommended. A MITIGATED NEGATIVE DECLARATION WILL BE PREPARED.

Georgiena M. Vivian

Prepared by Georgiena M. Vivian, Vice President,
VRPA Technologies
Date: January 29, 1999

APPENDIX A

Air Quality Modeling Results

URBEMIS 7G: Version 3.1

File Name: CHANAQ.URB
Project Name: Chandler Airport AQ Analysis
Project Location: San Joaquin Valley

SUMMARY REPORT
(Tons/Year)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (tpy, unmitigated)	29.34	1.39	1.76	0.91
TOTALS (tpy, mitigated)	29.34	1.39	1.76	0.48

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (tpy, unmitigated)	0.15	1.86	0.82	0.00
TOTALS (tpy, mitigated)	0.01	0.19	0.73	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (tpy, unmitigated)	50.53	81.65	412.65	3.07
TOTALS (tpy, mitigated)	49.82	80.33	406.02	3.02

URBEMIS 7G: Version 3.1

File Name: CHANAQ.URB
Project Name: Chandler Airport AQ Analysis
Project Location: San Joaquin Valley

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (ppd, unmitigated)	2474.12	99.53	14.09	710.88
TOTALS (ppd, mitigated)	2473.52	95.08	14.09	283.42

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (ppd, unmitigated)	0.86	10.17	4.91	0.02
TOTALS (ppd, mitigated)	0.20	1.02	4.43	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	PM10
TOTALS (ppd, unmitigated)	233.82	426.26	1724.17	16.80
TOTALS (ppd, mitigated)	230.62	419.37	1696.40	16.53

RECEPTOR	PRED CONC (PPM)	WIND BRG (DEG)	COCN/LINK (PPM) A	B	C	D	E	F	G	H
RECPT 1	11.5	337	0.0	0.0	0.1	0.1	0.0	0.0	3.1	3.2
RECPT 2	7.2	331	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.0
RECPT 3	5.7	313	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.2
RECPT 4	5.9	148	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
RECPT 5	7.0	151	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0
RECPT 6	5.4	183	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
RECPT 7	5.9	328	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4
RECPT 8	6.4	329	0.0	0.0	0.1	0.1	0.0	0.0	0.6	0.6
RECPT 9	5.8	276	0.0	0.0	0.3	0.3	0.0	0.0	0.1	0.1
RECPT 10	5.9	276	0.0	0.0	0.3	0.3	0.0	0.0	0.1	0.1
RECPT 11	5.7	265	0.0	0.0	0.3	0.3	0.0	0.0	0.1	0.1
RECPT 12	5.9	276	0.0	0.0	0.0	0.0	0.4	0.3	0.1	0.1
RECPT 13	5.8	276	0.0	0.0	0.0	0.0	0.4	0.3	0.1	0.1
RECPT 14	5.8	264	0.0	0.0	0.0	0.0	0.3	0.3	0.1	0.1
RECPT 15	5.7	263	0.0	0.0	0.0	0.0	0.3	0.3	0.1	0.1

Model Results for Fresno-Chandler Airport Future with Project

APPENDIX B

Noise Modeling Results

SOUND32 - RELEASE 07/30/91

TITLE:
Chandler Airport Noise Impact Assessment (Existing)

BASED ON FHWA-RD-108 AND
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	61.4
R-2	61.4
R-3	63.2
R-4	62.1
R-5	62.9
R-6	55.7
R-7	62.9
R-8	62.9
R-9	60.5
R-10	60.0
R-11	59.8
R-12	62.0
R-13	62.4
R-14	60.9
R-15	61.4

SOUND32 - RELEASE 07/30/91

TITLE:
Chandler Airport Noise Impact Assessment (Without Project)

BASED ON FHWA-RD-108 AND
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	67.0
R-2	67.2
R-3	68.3
R-4	68.8
R-5	69.6
R-6	62.1
R-7	68.9
R-8	68.8
R-9	62.2
R-10	61.7
R-11	61.4
R-12	64.2
R-13	64.6
R-14	63.0
R-15	63.4

* * SOUND32 (CALTRANS VERSION OF STAMINA2/OPTIMA) * *

INPUT DATA FILE : NIA-CAWO
BARRIER COST FILE : CALIF$.DTA
DATE : 01-28-1999

Chandler Airport Noise Impact Assessment (Without Project)

TRAFFIC DATA

LANE NO.	AUTO VPH	AUTO MPH	MEDIUM TRKS VPH	MEDIUM TRKS MPH	HEAVY TRKS VPH	HEAVY TRKS MPH	DESCRIPTION
1	157	40	0	0	0	0	Thorne Avenue
2	157	40	0	0	0	0	Thorne Avenue
3	279	40	0	0	0	0	Kearney Avenue
4	279	40	0	0	0	0	Kearney Avenue
5	595	40	0	0	0	0	Whitesbridge
6	595	40	0	0	0	0	Whitesbridge
7	1514	40	0	0	0	0	Hughes\West
8	1514	40	0	0	0	0	Hughes\West

LANE DATA

LANE NO.	SEG. NO.	GRADE COR.	X	Y	Z	SEGMENT DESCRIPTION	
1	1	NO	3969.0	-328.0	0.0	1	
			3969.0	2935.0	0.0	1	
2	1	NO	3952.0	2935.0	0.0	1	
			3952.0	-328.0	0.0	1	
3	1	NO	-328.0	-7.0	0.0	1	
			4287.0	-7.0	0.0	1	
4	1	NO	4287.0	10.0	0.0	1	
			-328.0	10.0	0.0	1	
5	1	NO	-328.0	2631.0	0.0	1	
			4287.0	2631.0	0.0	1	
6	1	NO	4287.0	2650.0	0.0	1	
			-328.0	2650.0	0.0	1	
7	1	NO	25.0	-328.0	0.0	HW	
	2	NO	25.0	3500.0	0.0	L7	P2
	3	NO	-2600.0	5000.0	0.0	L7	P3
			-2600.0	5642.0	0.0	L7	P4
8	1	NO	-2620.0	5642.0	0.0	HW	
	2	NO	-2620.0	5000.0	0.0	L8	P2
	3	NO	0.0	3500.0	0.0	L8	P3
			0.0	-328.0	0.0	L8	P4

RECEIVER DATA

REC. NO.	X	Y	Z	DNL	PEOPLE	ID
1	-115.0	-98.0	5.0	67	500	R-1
2	-115.0	115.0	5.0	67	500	R-2
3	-115.0	2542.0	5.0	67	500	R-3
4	-2688.0	5199.0	5.0	67	500	R-4
5	-2542.0	5199.0	5.0	67	500	R-5
6	-115.0	3975.0	5.0	67	500	R-6
7	98.0	115.0	5.0	67	500	R-7
8	98.0	-98.0	5.0	67	500	R-8
9	3861.0	-98.0	5.0	67	500	R-9
10	4074.0	-98.0	5.0	67	500	R-10
11	4074.0	115.0	5.0	67	500	R-11
12	4074.0	2542.0	5.0	67	500	R-12
13	3861.0	2542.0	5.0	67	500	R-13
14	4074.0	2772.0	5.0	67	500	R-14
15	3861.0	2772.0	5.0	67	500	R-15

DROP-OFF RATES

ALL LANE/RECEIVER PAIRS = 3.0 DBA

K - CONSTANTS

ALL LANE RECEIVER/PAIRS = 0.0 DBA

SOUND32 - RELEASE 07/30/91

TITLE:
Chandler Airport Noise Impact Assessment (With Project)

BASED ON FHWA-RD-108 AND
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	68.6
R-2	68.7
R-3	69.2
R-4	70.0
R-5	70.8
R-6	63.3
R-7	70.4
R-8	70.3
R-9	64.3
R-10	63.9
R-11	63.4
R-12	64.3
R-13	64.6
R-14	63.0
R-15	63.5

* * SOUND32 (CALTRANS VERSION OF STAMINA2/OPTIMA) * *

INPUT DATA FILE : NIA-CAWP
BARRIER COST FILE : CALIF$.DTA
DATE : 01-28-1999

Chandler Airport Noise Impact Assessment (With Project)

TRAFFIC DATA

LANE NO.	AUTO VPH	AUTO MPH	MEDIUM TRKS VPH	MEDIUM TRKS MPH	HEAVY TRKS VPH	HEAVY TRKS MPH	DESCRIPTION
1	157	40	0	0	0	0	Thorne Avenue
2	157	40	0	0	0	0	Thorne Avenue
3	548	40	0	0	0	0	Kearney Avenue
4	548	40	0	0	0	0	Kearney Avenue
5	595	40	0	0	0	0	Whitesbridge
6	595	40	0	0	0	0	Whitesbridge
7	2013	40	0	0	0	0	Hughes\West
8	2013	40	0	0	0	0	Hughes\West

LANE DATA

LANE NO.	SEG. NO.	GRADE COR.	X	Y	Z	SEGMENT DESCRIPTION
1	1	NO	3969.0	-328.0	0.0	1
			3969.0	2935.0	0.0	1
2	1	NO	3952.0	2935.0	0.0	1
			3952.0	-328.0	0.0	1
3	1	NO	-328.0	-7.0	0.0	1
			4287.0	-7.0	0.0	1
4	1	NO	4287.0	10.0	0.0	1
			-328.0	10.0	0.0	1
5	1	NO	-328.0	2631.0	0.0	1
			4287.0	2631.0	0.0	1
6	1	NO	4287.0	2650.0	0.0	1
			-328.0	2650.0	0.0	1
7	1	NO	25.0	-328.0	0.0	HW
	2	NO	25.0	3500.0	0.0	L7 P2
	3	NO	-2600.0	5000.0	0.0	L7 P3
			-2600.0	5642.0	0.0	L7 P4
8	1	NO	-2620.0	5642.0	0.0	HW
	2	NO	-2620.0	5000.0	0.0	L8 P2
	3	NO	0.0	3500.0	0.0	L8 P3
			0.0	-328.0	0.0	L8 P4

RECEIVER DATA

REC. NO.	X	Y	Z	DNL	PEOPLE	ID
1	-115.0	-98.0	5.0	67	500	R-1
2	-115.0	115.0	5.0	67	500	R-2
3	-115.0	2542.0	5.0	67	500	R-3
4	-2688.0	5199.0	5.0	67	500	R-4
5	-2542.0	5199.0	5.0	67	500	R-5
6	-115.0	3975.0	5.0	67	500	R-6
7	98.0	115.0	5.0	67	500	R-7
8	98.0	-98.0	5.0	67	500	R-8
9	3861.0	-98.0	5.0	67	500	R-9
10	4074.0	-98.0	5.0	67	500	R-10
11	4074.0	115.0	5.0	67	500	R-11
12	4074.0	2542.0	5.0	67	500	R-12
13	3861.0	2542.0	5.0	67	500	R-13
14	4074.0	2772.0	5.0	67	500	R-14
15	3861.0	2772.0	5.0	67	500	R-15

DROP-OFF RATES

ALL LANE/RECEIVER PAIRS = 3.0 DBA

K - CONSTANTS

ALL LANE RECEIVER/PAIRS = 0.0 DBA

APPENDIX C

Level of Service Methodology and Results

LEVEL OF SERVICE (LOS) METHODOLOGY
CART Project

Florida Department of Transportation (DOT) Level of Service (LOS) Tables have been utilized to analyze street and highway segments along the RTP/CMP Systems. The Tables have been approved for use in Fresno by the City of Fresno Traffic Engineering Division, the Council of Fresno County Governments (COFCG), and Caltrans, District 06. The Tables (referred to as "Modified Highway Capacity Manual LOS Tables) have been used to specifically evaluate the impacts of existing and planned growth and developments on the existing and proposed circulation system.

The Florida LOS Tables were developed in 1988 by Florida FDOT in response to the passage of significant growth management legislation during the mid-1980s, as well as to the need to comply to standards published in the revised 1985 Highway Capacity Manual (HCM). The Tables were established to:

- provide a grade LOS (A thru F) for future transportation corridor segment analysis. Such analysis is not available from HCM applications;

- to provide a better estimate of segment LOS versus reliance on the volume to capacity (V/C) ratio methodology which is not HCM-based, since it does not consider the effects of delay and congestion, especially at signalized intersections along rural facilities where passing opportunities are limited; and

- to provide a consistent process to measure LOS.

Because the Tables consider the effects which cause congestion and delay, they are considered HCM-based and in accordance with the 1985 HCM wherein delay is the primary factor used to measure LOS.

The standards incorporated in the Modified HCM-Based LOS Tables include the correlation between urban size and highway congestion, urban infill, the different roles provided by state facilities, the impact of development and the provision of necessary infrastructure, flexibility in assessing special transportation areas, consideration of the relationship between highways and exclusive transit systems servicing commuters, and recognition that numerous state facilities are constrained and backlogged with no potential for expansion due to physical or policy barriers. Furthermore, the LOS Tables are applicable in determining street and highway system needs and deficiencies; directing development of long-range transportation activities within urban areas; assessing project priorities; evaluating additional access points such as interchanges, roads and driveways; analyzing regional and local government transportation/circulation plans; and determining impacts from proposed developments.

Information provided in the LOS Tables includes three different types of area analysis including: urbanized areas; areas transitioning into urbanized areas or non-urbanized areas with a population of over 5,000; and rural undeveloped areas or developed areas with a population of less than 5,000. The Tables are representative of peak hour and peak direction conditions with daily volumes encompassing directional, subhourly, hourly, daily, monthly, and seasonal peaking characteristics of traffic. Traffic conditions are evaluated considering 1) service flow rates (considered as the maximum hourly rate at which vehicles can safely pass through an intersection during a 15-minute interval under current traffic signalization conditions), and 2) a specified LOS.

Data provided by the LOS Tables are based upon methodologies provided from the 1985 HCM, as well as from actual traffic and signalization conditions. It should be noted that the Tables are considered measurement guidelines for street and highway LOS estimations, and are not to be considered as statewide standards. The use of LOS Tables is recommended for general planning applications necessary to evaluate street and highway LOS and through lane requirements. The Tables are directly applicable for use within more comprehensive planning activities in which less field data is available when planning takes longer to implement.

When dealing with the LOS Tables, default variables can be applied and include a variety of street and highway characteristics such as number of lanes, number of signalized intersections per mile, saturation flow rate, etc. The default variables referenced by street and highway types above, were only applied to calculate LOS when actual known data

(existing and future) was not available. To the extent possible, actual or planned street and highway geometrics, speeds, saturation flow, etc., were applied to calculate LOS. This information was gathered by VRPA Technologies and from the City of Fresno, Caltrans District 06, and the Council of Fresno County Governments (COFCG).

Given the extensive application of LOS Tables to various types of projects and analysis, the Tables are considered extremely applicable to the goal of segment LOS. This conclusion is based upon detailed comparative analysis considering various other HCM and delay-based methodologies referenced in the HCM.

Florida Department of Transportation

Freeway Level of Service Tables

Based on the 1985 Highway Capacity Manual

FREE_TAB Version 1.0

Date: 12-14-91

Developed by: E.Shenk, D.McLeod, W.McShane, and G.Brown

DESCRIPTION

ROAD NAME:	Freeway
Study Time Period:	AM/PH/ADT
Analysis Date:	
NAME:	
User Notes:	

TRAFFIC CHARACTERISTICS

		Range
K FACTOR:	0.092	(0.06 - 0.20)
D FACTOR:	0.568	(0.50 - 1.00)
PHF:	0.975	(0.70 - 1.00)
ADJ. SATURATION FLOW RATE:	1,900	(1600 - 2400)

ROADWAY CHARACTERISTICS

DESIGN SPEED (mph): 70 (70, 60, or 50)

NOTE: Press Alt-P to Calculate and Print Spreadsheet

PEAK HOUR PEAK DIRECTION VOLUME

	Level of Service				
LANES	A	B	C	D	E
2	1,300	2,000	2,850	3,450	3,710
3	1,950	3,000	4,280	5,170	5,560
4	2,590	4,000	5,710	6,890	7,410
5	3,240	5,000	7,130	8,610	9,260
6	3,890	6,000	8,560	10,340	11,120
7	4,540	7,000	9,980	12,060	12,970

PEAK HOUR VOLUME (BOTH DIRECTIONS)

	Level of Service				
LANES	A	B	C	D	E
4	2,280	3,520	5,020	6,070	6,520
6	3,420	5,280	7,530	9,100	9,780
8	4,570	7,040	10,050	12,130	13,050
10	5,710	8,810	12,560	15,170	16,310
12	6,850	10,570	15,070	18,200	19,570
14	7,990	12,330	17,580	21,230	22,830

AVERAGE ANNUAL DAILY TRAFFIC (AADT)

	Level of Service				
LANES	A	B	C	D	E
4	24,800	38,300	54,600	65,900	70,900
6	37,200	57,400	81,900	98,900	106,400
8	49,600	76,600	109,200	131,900	141,800
10	62,000	95,700	136,500	164,800	177,300
12	74,400	114,900	163,800	197,800	212,700
14	86,900	134,000	191,100	230,800	248,200

Florida Department of Transportation
Arterial Level of Service Tables
Based on the 1985 Highway Capacity Manual
ART_TAB Version 1.1
Date: 12-14-91
Developed by: B.Shenk, D.McLeod, W.McShane, and G.Brown

DESCRIPTION

ROAD NAME:	EXPRESSWAY
PEAK >>>>>>>>>> PEAK DIRECTION:	All
Study Time Period:	AM/PM PEAK
Analysis Date:	December, 1998
Number of Lanes:	
AADT:	
User Notes:	

TRAFFIC CHARACTERISTICS

		----Range----
K FACTOR:	0.091	(0.06 - 0.20)
D FACTOR:	0.558	(0.50 - 1.00)
PHF:	0.955	(0.70 - 1.00)
ADJ. SATURATION FLOW RATE:	2,000	(1400 - 2000)
% TURNS FROM EXCLUSIVE LANES:	12	(0 - 100)

ROADWAY CHARACTERISTICS

URBAN, TRANSITIONING, OR RURAL ARTERIAL (U/T/R):	t	
ARTERIAL CLASS:	1	(1, 2, or 3)
FREE FLOW SPEED (mph):	50	(55,50,45,40,35)

For Arterial Type and Class:	Use Free Flow speed of:
Rural	55, 50, 45, 40 or 35
Transitioning, Class 1	55, 50, 45, 40 or 35
Urban, Class 1	45, 40 or 35
Urban or Transitioning, Class 2	40, 35, 30 or 25
Urban, Class 3	35, 30 or 25

TOTAL LENGTH OF ARTERIAL (mi):	1	
MEDIANS (Y/N):	Y	
TURN BAYS (Y/N):	Y	

SIGNALIZATION CHARACTERISTICS

NO. SIGNALIZED INTERSECTIONS:	2	
ARRIVAL TYPE, PEAK DIRECTION:	4	(1, 2, 3, 4,or 5)
TYPE SIGNAL SYSTEM:	3	(1, 2, or 3)
	(1=Actuated, 2=Pretimed, 3=Semiactuated)	
SYSTEM CYCLE LENGTH (sec):	120	(60 - 180)
WEIGHTED THRU MOVEMENT g/C:	0.42	(0.20 - 0.80)

NOTE: Press Alt-P to Calculate and Print Spreadsheet

PEAK HOUR PEAK DIRECTION VOLUME
(Includes vehicles in exclusive turn lanes)
2 Intersections per mile
Level of Service

LANES	A	B	C	D	E
1	N/A	670	850	930	950
2	N/A	1,400	1,770	1,910	1,910
3	N/A	2,130	2,680	2,860	2,860
4	N/A	2,880	3,610	3,820	3,820

PEAK HOUR VOLUME (BOTH DIRECTIONS)
(Includes vehicles in exclusive turn lanes)
2 Intersections per mile
Level of Service

LANES	A	B	C	D	E
2	N/A	1,190	1,490	1,640	1,680
4	N/A	2,470	3,110	3,360	3,360
6	N/A	3,760	4,720	5,040	5,040
8	N/A	5,070	6,360	6,720	6,720

AVERAGE ANNUAL DAILY TRAFFIC (AADT)
(Includes vehicles in exclusive turn lanes)
2 Intersections per mile
Level of Service

LANES	A	B	C	D	E
2	N/A	13,100	16,400	18,000	18,500
4	N/A	27,200	34,200	36,900	36,900
6	N/A	41,300	51,900	55,400	55,400
8	N/A	55,700	69,800	73,900	73,900

N/A means the level of service is not achievable

Peak hour peak direction thru/right V/C ratios for full hour,,
Level of Service

LANES	A	B	C	D	E
1	N/A	0.71	0.89	0.97	1.00
2	N/A	0.74	0.93	1.00	1.00
3	N/A	0.74	0.94	1.00	1.00
4	N/A	0.75	0.95	1.00	1.00

Florida Department of Transportation
Arterial Level of Service Tables
Based on the 1985 Highway Capacity Manual
ART_TAB Version 1.1
Date: 12-14-91
Developed by: B.Shenk, D.McLeod, W.McShane, and G.Brown

DESCRIPTION

ROAD NAME: Arterial
PEAK >>>>>>>>>> PEAK DIRECTION: N/A
Study Time Period: AM/PM PEAK
Analysis Date: January, 1999
Number of Lanes:
AADT:
User Notes:

TRAFFIC CHARACTERISTICS

		Range
K FACTOR:	0.091	(0.06 - 0.20)
D FACTOR:	0.560	(0.50 - 1.00)
PHF:	0.930	(0.70 - 1.00)
ADJ. SATURATION FLOW RATE:	1,850	(1400 - 2000)
% TURNS FROM EXCLUSIVE LANES:	12	(0 - 100)

ROADWAY CHARACTERISTICS

URBAN, TRANSITIONING, OR RURAL ARTERIAL (U/T/R):	U
ARTERIAL CLASS:	2 (1, 2, or 3)
FREE FLOW SPEED (mph):	40 (45, 40, or 35)

For Arterial Type and Class:	Use Free Flow speed of:
Rural	55, 50, 45, 40 or 35
Transitioning, Class 1	55, 50, 45, 40 or 35
Urban, Class 1	45, 40 or 35
Urban or Transitioning, Class 2	40, 35, 30 or 25
Urban, Class 3	35, 30 or 25

TOTAL LENGTH OF ARTERIAL (mi):	1
MEDIANS (Y/N):	Y
URN BAYS (Y/N):	Y

SIGNALIZATION CHARACTERISTICS

NO. SIGNALIZED INTERSECTIONS:	3
ARRIVAL TYPE, PEAK DIRECTION:	4 (1, 2, 3, 4,or 5)
TYPE SIGNAL SYSTEM:	3 (1, 2, or 3)
	(1=Actuated, 2=Pretimed, 3=Semiactuated)
SYSTEM CYCLE LENGTH (sec):	120 (60 - 180)
WEIGHTED THRU MOVEMENT g/C:	0.62 (0.20 - 0.80)

NOTE: Press Alt-P to Calculate and Print Spreadsheet

PEAK HOUR PEAK DIRECTION VOLUME
(Includes vehicles in exclusive turn lanes)
3 Intersections per mile
Level of Service

LANES	A	B	C	D	E
1	N/A	640	1,050	1,190	1,260
2	N/A	1,330	2,180	2,420	2,570
3	N/A	2,000	3,350	3,670	3,850
4	N/A	2,720	4,510	4,950	5,190

PEAK HOUR VOLUME (BOTH DIRECTIONS)
(Includes vehicles in exclusive turn lanes)
3 Intersections per mile
Level of Service

LANES	A	B	C	D	E
2	N/A	1,130	1,860	2,090	2,220
4	N/A	2,350	3,840	4,270	4,520
6	N/A	3,520	5,890	6,470	6,790
8	N/A	4,780	7,940	8,710	9,130

AVERAGE ANNUAL DAILY TRAFFIC (AADT)
(Includes vehicles in exclusive turn lanes)
3 Intersections per mile
Level of Service

LANES	A	B	C	D	E
2	N/A	12,400	20,400	23,000	24,400
4	N/A	25,800	42,200	46,900	49,700
6	N/A	38,700	64,700	71,100	74,600
8	N/A	52,500	87,200	95,700	100,400

N/A means the level of service is not achievable

Peak hour peak direction thru/right V/C ratios for full hour

Level of Service

LANES	A	B	C	D	E
1	N/A	0.49	0.81	0.91	0.97
2	N/A	0.51	0.84	0.93	0.99
3	N/A	0.51	0.86	0.94	0.99
4	N/A	0.52	0.86	0.95	1.00

MARY Version 2.4d 02-01-1999

Center For Microcomputers In Transportation

Streets: (E-W) California (N-S) Thorne
Analyst: VRPA File Name: 1EPM.HC9
Area Type: Other 1-20-99 P.M.
Comment: Existing PM Peak Hour

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	<	1	1	<	1	1	<	1	1	1
Volumes	64	204	3	42	197	77	66	21	43	70	14	28
Lane W (ft)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vols			0			0			0			7
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	0.00

Signal Operations

Phase Combination		1	2	3	4	5	6	7	8
EB	Left	*							
	Thru		*						
	Right		*						
	Peds								
WB	Left	*							
	Thru		*						
	Right		*						
	Peds								
NB	Right								
SB	Right	*							
Green		10.0A	42.0A						
Yellow/AR		4.0	4.0						
NB	Left					*			
	Thru						*		
	Right						*		
	Peds								
SB	Left					*			
	Thru						*		
	Right						*		
	Peds								
EB	Right								
WB	Right								
Green						42.0A	10.0A		
Yellow/AR						4.0	4.0		

Cycle Length: 120 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	158	1719	0.425	0.092	34.4	D	22.1	C
	TR	647	1806	0.337	0.358	18.3	C		
WB	L	158	1719	0.279	0.092	33.1	D	21.3	C
	TR	621	1733	0.464	0.358	19.6	C		
NB	L	616	1719	0.112	0.358	16.6	C	25.6	D
	TR	149	1627	0.449	0.092	34.8	D		
SB	L	616	1719	0.120	0.358	16.7	C	20.1	C
	T	166	1810	0.090	0.092	32.3	D		
	R	359	1538	0.061	0.233	23.1	C		

Intersection Delay = 22.1 sec/veh Intersection LOS = C

Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.322

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Ph: (904) 392-0378

Streets: (N-S) West (E-W) Whites Bridge
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... VRPA
Date of Analysis..... 1/20/99
Other Information.....Existing PM Peak Hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	0	0	1	< 0	0	0	0	0	> 0	< 0
Stop/Yield			N			N						
Volumes	10	373			371	5				25		7
PHF	.95	.95			.95	.95				.95		.95
Grade		0			0						0	
MC's (%)	0									0		0
SU/RV's (%)	0									0		0
CV's (%)	10									10		10
PCE's	1.10									1.10		1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)		394
Potential Capacity: (pcph)		874
Movement Capacity: (pcph)		874
Prob. of Queue-Free State:		0.99

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		396
Potential Capacity: (pcph)		1110
Movement Capacity: (pcph)		1110
Prob. of Queue-Free State:		0.99
TH Saturation Flow Rate: (pcphpl)		1700
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:		0.99

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)		798
Potential Capacity: (pcph)		365
Major LT, Minor TH Impedance Factor:		0.99
Adjusted Impedance Factor:		0.99
Capacity Adjustment Factor due to Impeding Movements		0.99
Movement Capacity: (pcph)		360

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
SB	L	29	360 >					
				412	9.6	0.2	B	9.6
SB	R	8	874 >					
EB	L	12	1110		3.3	0.0	A	0.1

Intersection Delay = 0.4 sec/veh

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Streets: (N-S) West (E-W) Whitesbridge
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... VRPA
Date of Analysis..... 1/20/99
Other Information.....Existing PM Peak Hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1 <	0	0 >	1	0	0 >	0 <	0	0	0	0
Stop/Yield			N			N						
Volumes		356	42	76	318		53		50			
PHF		.95	.95	.95	.95		.95		.95			
Grade		0			0			0				
MC's (%)				0			0		0			
SU/RV's (%)				0			0		0			
CV's (%)				10			10		10			
PCE's				1.10			1.10		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	397	
Potential Capacity: (pcph)	871	
Movement Capacity: (pcph)	871	
Prob. of Queue-Free State:	0.93	

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	419	
Potential Capacity: (pcph)	1082	
Movement Capacity: (pcph)	1082	
Prob. of Queue-Free State:	0.92	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.90	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	812	
Potential Capacity: (pcph)	359	
Major LT, Minor TH Impedance Factor:	0.90	
Adjusted Impedance Factor:	0.90	
Capacity Adjustment Factor due to Impeding Movements	0.90	
Movement Capacity: (pcph)	323	

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	62	323 >					
				464	10.4	1.1	C	10.4
NB	R	58	871 >					
WB	L	88	1082		3.6	0.2	A	0.7

Intersection Delay = 1.5 sec/veh

Center For Microcomputers In Transportation
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512 Weil Hall
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Streets: (N-S) Thorne (E-W) Kearney
Analyst..... VRPA
Date of Analysis..... 1/20/99
Other Information.....Existing PM Peak Hour
All-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	< 0	0	> 1	< 0	0	> 1	< 0	0	> 1	< 0
Volumes	73	153	51	84	155	62	51	184	80	35	126	111
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95

Volume Summary and Capacity Analysis WorkSheet

	EB	WB	NB	SB
LT Flow Rate	77	88	54	37
RT Flow Rate	54	65	84	117
Approach Flow Rate	292	316	332	287
Proportion LT	0.26	0.28	0.16	0.13
Proportion RT	0.18	0.21	0.25	0.41
Opposing Approach Flow Rate	316	292	287	332
Conflicting Approaches Flow Rate	619	619	608	608
Proportion, Subject Approach Flow Rate	0.24	0.26	0.27	0.23
Proportion, Opposing Approach Flow Rate	0.26	0.24	0.23	0.27
Lanes on Subject Approach	1	1	1	1
Lanes on Opposing Approach	1	1	1	1
LT, Opposing Approach	88	77	37	54
RT, Opposing Approach	65	54	117	84
LT, Conflicting Approaches	91	91	165	165
RT, Conflicting Approaches	201	201	119	119
Proportion LT, Opposing Approach	0.28	0.26	0.13	0.16
Proportion RT, Opposing Approach	0.21	0.18	0.41	0.25
Proportion LT, Conflicting Approaches	0.15	0.15	0.27	0.27
Proportion RT, Conflicting Approaches	0.32	0.32	0.20	0.20
Approach Capacity	529	535	554	502

Intersection Performance Summary

Movement	Approach Flow Rate	Approach Capacity	V/C Ratio	Average Total Delay	LOS
EB	292	529	0.55	8.1	B
WB	316	535	0.59	9.4	B
NB	332	554	0.60	9.7	B
SB	287	502	0.57	8.8	B

Intersection Delay = 9.1
Level of Service (Intersection) = B

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Streets: (N-S) West (E-W) Kearney
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... VRPA
Date of Analysis..... 1/20/99
Other Information.....Existing PM Peak Hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	< 0	0	> 1	< 0	0	> 1	< 0	0	> 1	< 0
Stop/Yield			N			N						
Volumes	4	72	3	1	91	28	1	1	5	31	0	8
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		0			0			0			0	
MC's (%)	0			0			0	0	0	0	0	0
SU/RV's (%)	0			0			0	0	0	0	0	0
CV's (%)	10			10			10	10	10	10	10	10
PCE's	1.10			1.10			1.10	1.10	1.10	1.10	1.10	1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	78	110
Potential Capacity: (pcph)	1264	1218
Movement Capacity: (pcph)	1264	1218
Prob. of Queue-Free State:	1.00	0.99

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	79	125
Potential Capacity: (pcph)	1572	1495
Movement Capacity: (pcph)	1572	1495
Prob. of Queue-Free State:	1.00	1.00
TH Saturation Flow Rate: (pcphpl)	1700	1700
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-Free State:	1.00	1.00

Step 3: TH from Minor Street	NB	SB
Conflicting Flows: (vph)	208	194
Potential Capacity: (pcph)	848	863
Capacity Adjustment Factor due to Impeding Movements	1.00	1.00
Movement Capacity: (pcph)	845	860
Prob. of Queue-Free State:	1.00	1.00

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	197	196
Potential Capacity: (pcph)	814	815
Major LT, Minor TH Impedance Factor:	1.00	1.00
Adjusted Impedance Factor:	1.00	1.00
Capacity Adjustment Factor due to Impeding Movements	0.99	0.99
Movement Capacity: (pcph)	806	808

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)		Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	1	806	>					
NB	T	1	845	>	1116	3.2	0.0	A	3.2
NB	R	6	1264	>					
SB	L	36	808	>					
SB	T	0	860	>	866	4.4	0.0	A	4.4
SB	R	9	1218	>					
EB	L	4	1495			2.4	0.0	A	0.1
WB	L	1	1572			2.3	0.0	A	0.0

Intersection Delay = 0.8 sec/veh

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Streets: (N-S) Hughes (E-W) Kearney
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... VRPA
Date of Analysis..... 1/20/99
Other Information.....Existing PM Peak Hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	< 0	0	> 1	< 0	0	> 1	< 0	0	> 1	< 0
Stop/Yield			N			N						
Volumes	3	42	2	7	67	7	1	54	5	12	42	6
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		0			0			0			0	
MC's (%)	0			0			0	0	0	0	0	0
SU/RV's (%)	0			0			0	0	0	0	0	0
CV's (%)	10			10			10	10	10	10	10	10
PCE's	1.10			1.10			1.10	1.10	1.10	1.10	1.10	1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	45	74
Potential Capacity: (pcph)	1314	1270
Movement Capacity: (pcph)	1314	1270
Prob. of Queue-Free State:	1.00	0.99
Step 2: LT from Major Street	**WB**	**EB**
Conflicting Flows: (vph)	46	78
Potential Capacity: (pcph)	1630	1574
Movement Capacity: (pcph)	1630	1574
Prob. of Queue-Free State:	1.00	1.00
TH Saturation Flow Rate: (pcphpl)	1700	1700
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-Free State:	0.99	1.00
Step 3: TH from Minor Street	**NB**	**SB**
Conflicting Flows: (vph)	133	130
Potential Capacity: (pcph)	929	932
Capacity Adjustment Factor due to Impeding Movements	0.99	0.99
Movement Capacity: (pcph)	922	925
Prob. of Queue-Free State:	0.93	0.95
Step 4: LT from Minor Street	**NB**	**SB**
Conflicting Flows: (vph)	154	160
Potential Capacity: (pcph)	862	855
Major LT, Minor TH Impedance Factor:	0.94	0.93
Adjusted Impedance Factor:	0.96	0.94
Capacity Adjustment Factor due to Impeding Movements	0.95	0.94
Movement Capacity: (pcph)	819	802

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)		Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	1	819	>					
NB	T	63	922	>	944	4.1	0.1	A	4.1
NB	R	6	1314	>					
SB	L	14	802	>					
SB	T	48	925	>	922	4.2	0.1	A	4.2
SB	R	7	1270	>					
EB	L	3	1574			2.3	0.0	A	0.1
WB	L	8	1630			2.2	0.0	A	0.2

Intersection Delay = 2.1 sec/veh

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Streets: (N-S) Teilman (E-W) Whitesbridge
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... VRPA
Date of Analysis..... 1/20/99
Other Information.....Existing PM Peak Hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	0	0	1	< 0	0	0	0	0	> 0	< 0
Stop/Yield			N			N						
Volumes	48	358			311	20				43		29
PHF	.95	.95			.95	.95				.95		.95
Grade		0			0						0	
MC's (%)	0									0		0
SU/RV's (%)	0									0		0
CV's (%)	10									10		10
PCE's	1.10									1.10		1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)		338
Potential Capacity: (pcph)		933
Movement Capacity: (pcph)		933
Prob. of Queue-Free State:		0.96

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)		348
Potential Capacity: (pcph)		1170
Movement Capacity: (pcph)		1170
Prob. of Queue-Free State:		0.95
TH Saturation Flow Rate: (pcphpl)		1700
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:		0.94

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)		766
Potential Capacity: (pcph)		381
Major LT, Minor TH Impedance Factor:		0.94
Adjusted Impedance Factor:		0.94
Capacity Adjustment Factor due to Impeding Movements		0.94
Movement Capacity: (pcph)		358

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
SB	L	50	358 >					
				477	9.2	0.7	B	9.2
SB	R	34	933 >					
EB	L	56	1170		3.2	0.0	A	0.4

Intersection Delay = 1.0 sec/veh

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Streets: (N-S) Neilson (E-W) West
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... VRPA
Date of Analysis..... 1/20/99
Other Information.....Existing PM Peak Hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1 <	0	0 >	1	0	1	0	1	0	0	0
Stop/Yield			N			N						
Volumes		90	7	11	99		10		5			
PHF		.95	.95	.95	.95		.95		.95			
Grade		0			0			0				
MC's (%)				0			0		0			
SU/RV's (%)				0			0		0			
CV's (%)				10			10		10			
PCE's				1.10			1.10		1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	98	
Potential Capacity: (pcph)	1235	
Movement Capacity: (pcph)	1235	
Prob. of Queue-Free State:	1.00	

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	102	
Potential Capacity: (pcph)	1533	
Movement Capacity: (pcph)	1533	
Prob. of Queue-Free State:	0.99	
TH Saturation Flow Rate: (pcphpl)	1700	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.99	

Step 4: LT from Minor Street	NB	SB
Conflicting Flows: (vph)	214	
Potential Capacity: (pcph)	796	
Major LT, Minor TH Impedance Factor:	0.99	
Adjusted Impedance Factor:	0.99	
Capacity Adjustment Factor due to Impeding Movements	0.99	
Movement Capacity: (pcph)	789	

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	12	789		4.6	0.0	A	
NB	R	6	1235		2.9	0.0	A	4.1
WB	L	13	1533		2.4	0.0	A	0.2

Intersection Delay = 0.4 sec/veh

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Streets: (N-S) Marks Avenue (E-W) Whitesbridge
Major Street Direction.... EW
Length of Time Analyzed... 15 (min)
Analyst..... VRPA
Date of Analysis..... 1/20/99
Other Information.....Existing PM Peak Hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	> 1	< 0	0	> 1	< 0	0	> 1	1	0	> 1	< 0
Stop/Yield			N			N						
Volumes	29	255	53	68	241	48	53	62	16	11	77	17
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		0			0			0			0	
MC's (%)	0			0			0	0	0	0	0	0
SU/RV's (%)	0			0			0	0	0	0	0	0
CV's (%)	10			10			10	10	10	10	10	10
PCE's	1.10			1.10			1.10	1.10	1.10	1.10	1.10	1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.00	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.00	3.30
Left Turn Minor Road	6.50	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	296	280
Potential Capacity: (pcph)	980	999
Movement Capacity: (pcph)	980	999
Prob. of Queue-Free State:	0.98	0.98
Step 2: LT from Major Street	**WB**	**EB**
Conflicting Flows: (vph)	324	305
Potential Capacity: (pcph)	1201	1227
Movement Capacity: (pcph)	1201	1227
Prob. of Queue-Free State:	0.93	0.97
TH Saturation Flow Rate: (pcphpl)	1700	1700
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-Free State:	0.92	0.97
Step 3: TH from Minor Street	**NB**	**SB**
Conflicting Flows: (vph)	704	706
Potential Capacity: (pcph)	466	465
Capacity Adjustment Factor due to Impeding Movements	0.89	0.89
Movement Capacity: (pcph)	414	413
Prob. of Queue-Free State:	0.83	0.78
Step 4: LT from Minor Street	**NB**	**SB**
Conflicting Flows: (vph)	728	720
Potential Capacity: (pcph)	401	405
Major LT, Minor TH Impedance Factor:	0.70	0.73
Adjusted Impedance Factor:	0.77	0.79
Capacity Adjustment Factor due to Impeding Movements	0.75	0.78
Movement Capacity: (pcph)	301	316

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)		Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	L	62	301	>	353	16.3	1.8	C	
NB	T	72	414	>					14.8
NB	R	19	980			3.7	0.0	A	
SB	L	13	316	>					
SB	T	89	413	>	441	11.3	1.2	C	11.3
SB	R	20	999	>					
EB	L	34	1227			3.0	0.0	A	0.3
WB	L	79	1201			3.2	0.1	A	0.6

Intersection Delay = 3.7 sec/veh